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15 April 1986

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AGRICULTURE

POLAND

## CULTIVATION, GEOGRAPHICAL DISTRIBUTION OF VEGETABLES

Warsaw POSTĘPY NAUK ROLNICZYCH in Polish No 4, 1984 pp 29-39

[Article by Adam Galczyński of the Warsaw Polish Academy of Sciences Institute of Rural and Agricultural Development: "Directions of Field Crop Cultivation in Poland"]

[Text] The cultivation of field crops [vegetables] in Poland has a tradition which goes back several hundred years. However, for a long period of time their significance was small and their range limited. They were cultivated almost exclusively near large noblemen's manor estates and monasteries.

In modern times, the science of nourishment has contributed substantially to the understanding of the value of nutrients contained in vegetables, e.g., vitamins, and to the explanation of their positive effect on the human body.

Such knowledge has resulted in increased public awareness and its conviction about the favorable effects of vegetable consumption. As a result, the demand for vegetables has increased so much that currently they are treated as an indispensable part of the daily diet.

Presently, vegetables as a whole occupy a considerable area of cultivated land. In 1981 (Ref 9), a total of 277,100 hectares were cultivated in the field and under protective covering. From this, a crop yield of 5,087,000 tons was obtained. A surface area of 274,500 hectares of field crops alone was sown, from which 4,880,300 tons of vegetables were obtained.

By comparison with 1980 and with the average annual area under cultivation from 1976 to 1980 (Table 1), a 6,500 and 20,900 respectively greater hectare area was sown [in 1981].

By comparison with the average area under field crop [vegetable] cultivation between 1976 and 1980, a marked increase in the area under cultivation of all the various types of field crops occurred in 1981.

This increase, with the exception of the remaining vegetables, is also evident by comparison with 1980. The largest absolute increase in the cultivated surface area during the 2 above mentioned years [1980 and 1981] occurred in the case of cabbage (2,700 hectares) and cucumbers (2,500 hectares); the smallest increase occurred in the case of cauliflower (0.300 hectares) as well as red beets and tomatoes with a 0.600 hectare increase each.

Table 1. Area of Field Crop Cultivation (in thousands of hectares)

(1) Wyszczególnienie	(2) Lata		
	1976-80	1980	1981
(3) Ogółem	255,5	270,5	277,1
(4) w tym: w gruncie	253,6	268,0	274,5
(5) Kapusta	60,1	60,3	63,0
(6) Kalafiory	10,3	10,6	10,9
(7) Cebula	24,6	26,1	26,8
(8) Marchew jadalna	26,4	26,1	26,8
(9) Buraki ćwikłowe	19,7	20,6	21,2
(10) Ogórki	31,4	32,0	34,5
(11) Pomidory	30,2	30,7	31,3
(12) Pozostałe	50,9	59,4	57,8

(13) Źródło: wg GUS, 1982.

Key:

- |                            |   |
|----------------------------|---|
| 1. Specification           | 8. Edible carrots   |
| 2. Years                   | 9. Red beets  |
| 3. Altogether              | 10. Cucumbers   |
| 4. Cultivated in the field | 11. Tomatoes  |
| 5. Cabbage                 | 12. Remaining vegetables  |
| 6. Cauliflower             | 13. Source: according to GUS [Central Office of Statistics], 1982 |
| 7. Onions                  |   |

Table 2. Field Crop Yields (in quintals per hectare)

(1) Wyszczególnienie	1980	1981	(2) Różnica
(3) Kapusta	225	258	33
(4) Kalafiory	135	150	15
(5) Cebula	115	158	43
(6) Marchew jadalna	194	221	27
(7) Buraki ćwikłowe	182	220	38
(8) Ogórki	74	148	74
(9) Pomidory	59	142	83
(10) Pozostałe	90	105	15

(11) Źródło: wg GUS, 1982.

Key:

- |                   |                                    |
|-------------------|------------------------------------|
| 1. Specification  | 7. Red beets                       |
| 2. Difference     | 8. Cucumbers                       |
| 3. Cabbage        | 9. Tomatoes                        |
| 4. Cauliflower    | 10. Remaining vegetables           |
| 5. Onions         | 11. Source: according to GUS, 1982 |
| 6. Edible carrots |                                    |



Table 3. Structure of the Area of Field Crops (in %)

(1) Wyszczególnienie	(2) Lata			(3) różnica 1980—1981
	1980	1981		
(4) Kapusta	22,5	22,9		0,4
(5) Kalafior	4,0	4,0		0,0
(6) Cebula	9,7	9,8		0,1
(7) Marchew jadalna	10,5	10,5		0,0
(8) Buraki ćwikłowe	7,7	7,7		0,0
(9) Ogórki	12,0	12,6		0,6
(10) Pomidory	11,5	11,4		-0,1
(11) Pozostałe	22,1	21,1		-1,0
(12) Razem	100,0	100,0		—

(13) Źródło: obliczenia własne na podstawie materiałów GUS, W-wa, 1982.

## Key:

- |                   |                                    |
|-------------------|------------------------------------|
| 1. Specification  | 8. Red beets                       |
| 2. Years          | 9. Cucumbers                       |
| 3. Difference     | 10. Tomatoes                       |
| 4. Cabbage        | 11. Remaining vegetables           |
| 5. Cauliflower    | 12. Total                          |
| 6. Onions         | 13. Source: Own computation on the |
| 7. Edible carrots | basis of GUS material, Warsaw 1982 |

The increase in the area of field crops under cultivation went hand in hand with their yield increase. The yield obtained from some types of vegetables in particular provinces shaped itself somewhat differently. Among other things (Ref 9), cabbage yields were lower in the following provinces: Grozow, Katowice, Krakow, Legnica, Siedlce, Walbrzych and Zielona Gora.

This decrease should be considered temporary and is explained by the fact that in 1980, there were water shortages in many areas of the country caused by an insufficient amount of rainfall during the spring and summer months.

It follows from Table 3 that small changes occurred in the structure of the surface area under field crop cultivation in 1981 as compared with the previous year. The cultivated area of onions, cabbage and cucumbers increased by 1.1, 0.4 and 0.6 percentage points respectively and decreased in the production of tomatoes and remaining vegetables by 0.1 and 1.0 percentage points respectively.

The structure of the cultivation of field crops presented for Poland overall differs quite significantly in its particular regions and provinces. Familiarization with this differentiation and its presentation in aggregate form is made possible through the specification of the directions of vegetable cultivation in all the sectors combined.

The method of consecutive quotients presented by, among others, Kulikowski (Ref 5) in his work on defining the directions of total production in private farming was used for determining the geographical distribution of vegetables.

In general terms, this method is based on the division of values or the percentage share of individual elements, which enter into the composition of a studied structure, by consecutive natural numbers from 1 to n. Thus, using k elements (in this case, these are vegetable types), we receive--as the result of such a division--a set of numbers (k [times] n) and subsequently, from these numbers we select a quantity, assumed in advance, of the n highest numbers. In the case of this particular work, n represents the six highest numbers, so-called highest consecutive quotients.

In defining the directions of vegetable cultivation, the acreage of vegetable cultivation in hectares for agriculture as a whole was taken into account according to the data and classification adopted by GUS whereby vegetables are grouped as follows: cabbage, cauliflower, onions, edible carrots, red beets, cucumbers, tomatoes and remaining vegetables (parsley, leeks, celery, radishes, lettuce, green peas, string beans and others).

Table 4. Directions of Field Crop Cultivation (Legend for Figure 1)

<u>Direction Name</u>	<u>Name of Province</u>
1. Direction group with predominance of remaining vegetables.	
Marked predominance of remaining vegetables with a share of cabbage and tomatoes.	Leszno
Marked predominance of remaining vegetables with a share of cabbage and carrots.	Walbrzych
Marked predominance of remaining vegetables with cabbage, carrots and cucumbers.	Elblag, Torun
Remaining vegetables with cabbage, carrots and cucumbers.	Warsaw, Bydgoszcz
Remaining vegetables with cabbage, carrots, cucumbers and tomatoes.	Kalisz, Poznan
	Lodz [city of]
Remaining vegetables with cabbage, carrots, beets and cucumbers	Olsztyn
2. Direction group with a predominance of tomatoes.	
Predominantly tomatoes with cabbage, cucumbers and remaining vegetables.	Wloclawek
Predominantly tomatoes with cabbage and remaining vegetables.	Chelm
Tomatoes with a share of cabbage, onions, cucumbers and remaining vegetables.	Skierniewice
3. Direction Group with predominance of onions.	
Onions with a share of cabbage, cucumbers, tomatoes and remaining vegetables	Plock
4. Direction group with predominance of cabbage and remaining vegetables.	
Cabbage, with remaining vegetables and cucumbers and tomatoes.	Gorzow, Radom, Rzeszow, Tarnow

Cabbage with remaining vegetables and onions and cucumbers.	Legnica, Wroclaw
Cabbage with remaining vegetables and carrots and cucumbers.	Bielsko-Biala, Katowice, Opole, Pila, Sieradz
5. Direction group with predominance of cabbage and tomatoes. Cabbage-tomato line with onions and cucumbers.	Tarnobrzeg
6. Direction group with predominance of cabbage and cucumbers. Cabbage-cucumber predominance with tomatoes and remaining vegetables.	Biala Podlaska
7. Direction group with predominance of cabbage. Cabbage with onions, cucumbers, tomatoes and remaining vegetables.	Bialystok, Konin Lublin
Cabbage with carrots, cucumbers, tomatoes and remaining vegetables.	Ciechanow, Kielce, Szczecin, Zielona-Gora
Cabbage with carrots, beets, cucumbers and remaining vegetables.	Kozalin, Lomza, Ostroleka, Suwalki
Cabbage with onions, carrots, cucumbers and remaining vegetables.	Krakow[city of], Przemysl, Zamosc
Cabbage with remaining vegetables and cucumbers.	Krosno
Cabbage with remaining vegetables and carrots.	Gdansk
Cabbage with beets, cucumbers and remaining vegetables.	Jelenia Gora, Nowy Sacz
Cabbage with carrots, cucumbers and remaining vegetables.	Czestochowa, Slupsk, Piotrkow Trybunalski

Source: Own work on the basis of GUS material, Warsaw 1982.

In 1981, there were a total of 22 directions of field crop cultivation in Poland (Table 4). Seven group directions (Figure 1) were singled out on the basis of the share of the particular vegetable types:

1. Direction group with a predominance of remaining vegetables.
2. Direction group with a predominance of tomatoes.
3. Direction group with a predominance of onions.
4. Direction group with a predominance of cabbage and remaining vegetables.
5. Direction group with a predominance of cabbage and tomatoes.
6. Direction group with a predominance of cabbage and cucumbers.
7. Direction group with a predominance of cabbage.

The direction of the first group occurred in 10 provinces (20.4 percent of the country's provinces as a whole). Six directions made up the group and are characterized in accordance with the principle of decreasing intensity of occurrence.

Direction 1.1 has a marked predominance of remaining vegetables with a share of cabbage and tomatoes and occurred in Leszno Province. Due to the large share of tomatoes and remaining vegetables in this direction, it belongs to the most intensive in Poland.

A second, nearly equal in terms of intensity, is direction 1.2 with a marked predominance of remaining vegetables along with a share of cabbage and carrots in Walbrzych Province.

Direction 1.3 was somewhat less intensive with a marked predominance of remaining vegetables along with cabbage, carrots and cucumbers in Elblag and Torun Provinces.

The remaining directions of the first group, which are also considered as intensive, were more differentiated outwardly because of the vegetable makeup. The vegetables of the remaining [vegetables] group constituted more than 30 percent of the share of vegetables whereby the remaining 60 to 70 percent were most frequently: cabbage, onions or tomatoes, cucumbers and carrots (Table 4). Two of them, i.e., remaining vegetables with a percentage share of carrots, cucumbers and tomatoes, and remaining vegetables with cabbage, onions, carrots and cucumbers occurred in the provinces of Kalisz, Lodz [city of], Poznan, and Warsaw and Bydgoszcz respectively.

In general, directions with a predominance of vegetables from the remaining group usually occurred in provinces with a long established tradition of vegetable growing. They represent vegetable farming on the highest agrotechnical and economic level in Poland. Their regions, as a rule, have good natural conditions and a high degree of mechanized field work. Olsztyn Province constitutes a certain departure from the rule in terms of good climate conditions. However, because of the overall good soil-moisture conditions and the large share of the socialized sector in managing the land, it appears that the activity according to plan of the agencies that control this sector results in that the significance of vegetables, including the remaining vegetables, cabbage and cucumbers, is properly understood. Moreover, a properly understood substitution of the live work force and traction force with mechanical power and technical reinforcement of all of agriculture is assured there.

The next group of intensive directions with a predominance of tomatoes was smaller (6.1 percent of the provinces as a whole). This group was made up of three directions: 2.1--largely tomatoes with a percentage share of cabbage, cucumbers and remaining vegetables in Wloclawek Province; 2.2--largely tomatoes with a percentage share of cabbage and remaining vegetables in Chelm Province as well as 2.3--tomatoes with a percentage share of cabbage, onions, cucumbers and remaining vegetables in Skierniewice. The first and third of the presented directions represent highly intensive vegetable farming situation on average soil. The group of directions with a predominance of onions in its structure

also belongs to the group of intensive directions. Only one direction; i.e., 3.1 with a predominance of onions and a percentage share of cabbage, cucumbers, tomatoes and remaining vegetables went into the makeup of this group occurring in Plock Province.

The directions mentioned up to this point represent farming and, particularly, vegetable growing with a high degree of agrotechnology. They encompassed the regions of central Poland, from Elblag Province on both sides of the Vistula River to Warsaw Province and also the western part of the following provinces: Poznan, Leszno and Kalisz as well as several provinces, such as Walbrzych, Biala Podlaska and Chelm.

The remaining groups of directions are considered less intensive, regardless of their production scale because of the greater percentage share of cabbage and root [row] crops in the structure.

The group of directions with a predominance of cabbage and remaining vegetables is included in the medium intensive category. Two directions appeared most often in this group; i.e., 4.3--predominance of cabbage with remaining vegetables and carrots and cucumbers in Bielsko-Biala, Katowice, Opole, Pila and Sieradz Provinces and 4.1--cabbage with remaining vegetables and cucumbers and tomatoes in the provinces of Gorzow, Radom, Rzeszow and Tarnow respectively. The third direction of the aforementioned group is 4.2--cabbage with remaining vegetables as well as onions and cucumbers which occurred only in the provinces of Legnica and Wroclaw.

The next two direction groups (5 and 6) with a predominance of cabbage and tomatoes as well as cabbage and cucumbers were each represented by only one direction.

The three groups of directions discussed (4, 5, 6) belong to the medium intensive category. In the structure of each of the above mentioned directions, cabbage always constituted more than 30 percent whereas vegetables of the remaining [vegetables] group as well as tomatoes, onions and cucumbers made up approximately 50 percent.

The aforementioned directions are characteristic for vegetable growing in industrialized regions and near large urban centers which produce vegetables for consumer markets in their closest proximity. A highly regionally differentiated method of production occurs there; i.e., from relatively simple technology based on traction horsepower (care and equipment) in the eastern, southeastern and southern parts of the country to more sophisticated forms which denote mechanized farming and vegetable growing in southwestern Poland (Opole, Wroclaw and Legnica Provinces) and the northwestern regions (Gorzow and Pila).

Together, these 3 groups of directions occurred in 13 provinces (26.5 percent of the provinces taken as a whole) mainly located in the southern and partly in the northwestern (Gorzow, Pila) and eastern (Biala Podlaska) parts of Poland (see illustration).

The last group of directions of vegetable cultivation with a predominance of cabbage occurred in agriculture overall in 1981 in as many as 22 provinces

(45 percent of the provinces as a whole). The percentage share of cabbage in the directions vacillated between 35 percent and more than 50 percent.

The discussed group of the so-called little intensive directions was represented by seven directions. Two of them: predominantly cabbage with carrots, cucumbers, tomatoes and remaining vegetables as well as cabbage with a percentage share of carrots, beets, cucumbers and remaining vegetables each occurred in four provinces; i.e., the provinces of Ciechanow, Kielce, Szczecin and Zielona Gora, and Koszalin, Lomza, Ostroleka and Suwalki respectively. The remaining directions, which contain approximately 33 percent cabbage and 17 percent to 34 percent root crops are as follows: predominantly cabbage line with percentage share of onions, cucumbers, tomatoes and remaining vegetables as well as cabbage with onions, carrots, cucumbers and remaining vegetables.

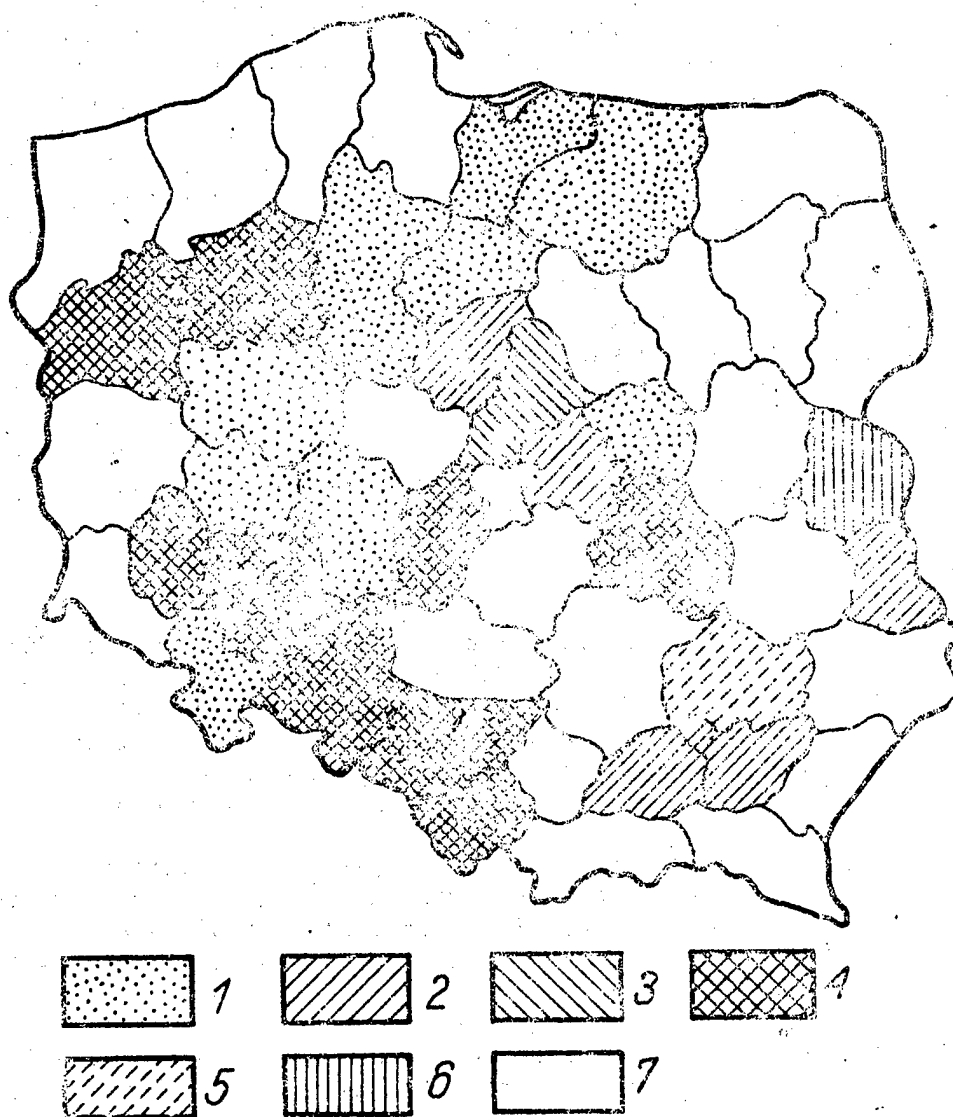


Figure 1. [Geographical Distribution of Vegetables in Poland]

The following include directions with a percentage share of more than 65 percent of ordinary vegetables (little intensive) in the structure of vegetable directions: cabbage with remaining vegetables and carrots in Gdansk Province; cabbage with remaining vegetables and cucumbers in Krosno Province and cabbage with beets, cucumbers and remaining vegetables in the provinces of Czestochowa, Piotrkow Trybunalski and Slupsk.

Vegetable lines belonging to those with a low level of intensiveness were characteristic for traditional vegetable farming geared mainly toward the production of ordinary vegetables not requiring a high expenditure of labor or at least considerably less than in the cultivation of vegetables from the groups of remaining vegetables and those intended for processing (cucumbers, tomatoes).

Moreover, in labor expenditure a large percentage share is occupied by the work performed by a farmer and his family and live motive power. The hiring of additional labor is used most often on farms with a larger degree of vegetable production and also on socialized farms. On a national scale, the largest percentage share of directions where cabbage was dominant occurred in northern Poland (provinces of Szczecin, Koszalin, Slupsk and Gdansk); in the northeastern part of the country (Suwalki, Bialystok, Lomza and Ostroleka Provinces); southeastern (Przemysl, Krosno, Nowy Sacz) and southern (Krakow, Kielce, Piotrkow Trybunalski and Czestochowa Provinces).

In vegetable farming represented by low intensive directions, there is a great deal of regional differentiation in the production methods. The previously mentioned system is repeated whereby in the southern and eastern parts of the country, with a predominance of private farming, there occurs the extensive method of farming based on live horsepower and live manpower on family farms. In turn, in the western and northern parts of the country, production methods based on a mechanical driving force are dominant and there also occurs a high degree of substitution of live manpower with technical methods.

#### Summation

It is difficult to choose one direction from the large number of directions of field crop cultivation occurring in Poland and consider it as a model for all the regions and provinces. The reason for this is, above all, the awareness that the optimal direction of field crop cultivation for a given region, province or gmina is in large part dependent upon economic factors such as: supply of manpower, distance from selling markets, supplies of production means, etc.

The observation made by Kos (Ref 3) is considered to be particularly useful whereby he demonstrates that the structure and changes in the structure of vegetable consumption in the province of the capital city of Warsaw best reflect the needs and potential of the public in this regard as compared with the remaining structures of vegetable consumption in other parts of the country. With obvious differences occurring in the realm of the professional structure of the populace of particular regions, the model of vegetable consumption in Warsaw Province may be considered a premise which should be taken into account in the planning of the production of vegetables in other parts of the country. In this model, the percentage share of cabbage is assumed to be at up to 20 percent; that of root crops and onions, up to 26 percent and that of vegetables from the group of remaining vegetables, tomatoes, cucumbers and cauliflower at above 50 percent.

In the case of the production of vegetables, the most appropriate for practical application would be the directions of vegetable cultivation belonging to the group of directions with a predominance of remaining vegetables and tomatoes. These directions, in the region of their occurrence, assure the possibility of the implementation of the assumed standard of vegetable consumption. Direction 1.4--remaining vegetables with cabbage, onions, carrots and cucumbers occurring in the province of the capital city of Warsaw and Bydgoszcz; direction 1.5--remaining vegetables with cabbage, carrots, cucumbers and tomatoes which was characteristic of vegetable growing in the province of Kalisz, Lodz, and Poznan as well as direction 1.6--remaining vegetables with cabbage, carrots, beets and cucumbers characteristic for vegetable growing in Olsztyn Province, could be particularly useful.

The topic discussed in this study appears to be quite timely in this day and age. The defining of the directions of vegetable cultivation by means of consecutive quotients enables the relatively quick and precise formulation of the structure of vegetable cultivation and the understanding of its internal differentiation. Moreover, making use of the standard values of labor intensiveness in the cultivation of the particular kinds of vegetables as worked out by Z. Baranska, makes it possible to group the separate directions according to the degree of manpower expenditure. The presented method may also be of use to planners in correcting the already existing vegetable production plans or in defining assumptions and prospective production directions.

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CSO: 2600/145

AGRICULTURE

POLAND

BRIEFS

AGRICULTURAL COOPERATION WITH CEMA--Warsaw, March 26--Poland has expanded agricultural cooperation with CEMA and other countries, especially in raising soil productivity and fertility, effective use of the means of production, and development of new breeds of high-crop plants. Concerning animal production, the cooperation focuses chiefly on industrial-scale production, and prevention and fighting farm animal diseases. Scientific and technological cooperation has also been widened on mechanization and automation of agricultural production processes. New comprehensive ways of growing barley, potatoes and sugar beet, and a comprehensive technology of production of slaughter pigs, developed by Polish experts in a drive to increase agricultural production in the community, are entering practice in Poland. The new technologies were applied on an area of 400,000 hectares last year and the results confirmed the earlier tests that the resultant average increase of wheat crop is 1,000 kg on a hectare, and barley--900 kg. [Text] [Warsaw PAP in English 0925 GMT 26 Mar 86 LD] /9365

CSO: 2020/106

ECONOMY

CZECHOSLOVAKIA

#### CSSR VIEWS PRC ECONOMIC REFORM

AU181557 Prague RUDE PRAVO in Czech 11 Mar 86 p 6

[Article by Vladimir Divis: "Changes in Chinese Economic Policy; The Reform 1 Year Later"]

[Text] The reform of the PRC's economic system is lately a frequent topic in the commentaries of foreign experts dealing with the problems of the Far East. The resolution on this reform was adopted by the CPC Central Committee in October 1984. This document formulated the goal for the next decade--to build "socialism with Chinese face."

What is typical for this concept? Contrary to the preceding experiments like the "Great Leap Forward" (proclaimed in 1958) or the so-called Cultural Revolution (1966-76), it proceeds from a more realistic appraisal of the possibilities of Chinese economy. It does not strive to skip the individual phases of development and it is not setting exorbitant tasks.

The CPC leadership is attempting to draw conclusions from the society-wide chaos and the mistakes of the past, even though it is doing this inconsistently and in a most discrepant way.

#### 20 Wasted Years

"The PRC has wasted 20 years because of the ultraleft-wing nonsense connected with Mao," this is how Hu Yaobang, the present CPC Central Committee general secretary, characterized Mao Zedong's political line.

The first basic decision which preceded the proclamation of the reform were changes in the organization of agricultural production, approved by the CPC Central Committee in December 1978. The concept of so-called open doors was adopted, and four "special economic zones" established within its framework. The model of the current reforms was to be practically tested there for 4 years.

China, with its more than 1 billion inhabitants, belongs even today among the poorest countries in the world, although it holds the eighth place in terms of its economic potential. In 1983 the national income per PRC citizen was about to \$230; this pushes the PRC state into the second-hundred group of countries

on our planet. On the lowest rung of the social ladder are people living mostly in remote parts of the country, where the per capita income in 1984 amounted to merely 159 yuan (that is \$49), whereas a worker in Beijing earned about 100 yuan a month.

A lot can also be learned from the comparison of the earnings of different social groups. Since the proclamation of the reform in rural areas in 1978, the annual per capita incomes increased there from 134 to 355 yuan in 1984--on the other hand, among citizens living in cities they increased from originally 316 to 608 yuan per citizen.

At the same time, regardless of these encouraging figures and of a certain universal narrowing of the difference in the living standards between villagers and the inhabitants of cities, the reform soon helped to rapidly deepen the social differences in most strata of Chinese society. Until recently, the official press devoted extensive propaganda to the "entrepreneurship" of families with annual incomes of more than 10,000 yuan, because they had known how to make use of the mistakes of the past and filled the market need with private enterprise in the transportation of supplies of fresh vegetables and dairy produce to the cities, and so forth.

#### The Substance of the Reform

However, let us return to the substance of the new reform. Its principles include:

- the gradual introduction of a certain form of cost accounting [khozraschet] in the management of state and cooperative enterprises;
- the enhancement of the role played by economic tools, such as prices, taxes, bank credits, and so forth;
- the expansion of enterprise independence in planning, production, sales, and pricing issues;
- a gradual transition from planning to merely noncommittal recommendations to producers;
- the increase of the impact made by the market demand on the production programs of enterprises, and particularly smaller units;
- the decrease of the number of intermediary links between producer and consumer;
- and the enhancement of the role played by cities as "natural economic centers," contrary to the former system of ministerial and territorial management.

In this connection all enterprises were divided into three groups. In the first key sphere--which includes all significant branches, such as the

extraction of raw materials, the production of energy, the heavy and armament industries, the construction industry, and other spheres which represent a considerable part of economy--mandatory planning continues to apply.

In the second sphere, above all in the production of consumer goods, only skeleton orientation plans have been introduced, which are meant to make it possible to take the specifics of individual areas into account.

The third sphere includes agriculture, the production affiliated with it, and the services which will be exclusively directed by the demand on the market.

The results of the Sixth Quinquennium (1981-85) speak of enormous reserves in the Chinese economy, which are not yet being utilized. The gross national income in the country showed an averaged annual growth of 10 percent, primarily thanks to the elimination of most blatant disproportions and earlier management mistakes, as the paper CHINA DAILY [name given in English] stated, referring to Tian Jiyun, vice premier of the PRC's State Council. During the same period, 1981 to 1985, agricultural production increased by 10.8 percent, and industrial production by 10.6 percent. For comparison: up to the year 1979, the increment in agricultural production did not go beyond 3.5 percent.

#### The PRC's Foreign Deficit Encouraged Critics

Yet another fact, contained in Tian's speech, is worthy of attention. Last year, enterprises in social ownership produced 94 percent of the bulk of gross national income, whereas mixed firms, companies with a participation of foreign capital, and private operations produced only the remaining 6 percent. Currently 17 million Chinese (3.5 percent of the manpower) are working in the private sector; by 1990 their number is expected to reach as many as 50 million.

The calls for a new technology have inordinately stepped up interest in foreign-made machinery, and thus the pressure to import organizations. In consequence of a weakening central control, last year saw such paradoxes as, for instance, the parallel imports of similar lines for producing color television sets in several provinces.

The Chinese Ministry of Foreign Trade is claiming that the PRC's deficit last year amounted to a "mere" \$7.6 billion. But the Chinese central customs administration, which has at its disposal the data on the direct trade of individual provinces with partners abroad, spoke of 13.7 billion. This has caused considerable confusion in China itself, and encouraged the numerous critics of economic reforms.

The growing arbitrariness, which is creating in Chinese economy suitable conditions for inflation and for rapid price increases, is also attested to by the articles appearing on the pages of the CPC Central Committee's press organ, RENMIN RIBAO.

Only last year, this paper was demanding that state interventions be curtailed and that a scope be established for market forces. At the beginning of this year, after an increasingly negative experience, the paper began calling more emphatically for a "stricter state control over the course of economy," underscoring its "key significance" for the harmonious development of the country's economy.

#### Exaggerated Optimism Replaced by Sobriety

From the recent speeches of Chinese Prime Minister Zhao Ziyang and his deputies it follows that even the government itself is beginning to realize more clearly the growing danger of these negative accompanying phenomena of the proclaimed reform. On the one hand, there is the situation of hundreds of millions of villagers, which is not improving; and then there are the thousands of private business owners speculators, and middlemen, who are rapidly getting richer. The growing dissatisfaction with the constantly rising prices of services and foodstuffs is also seen among city inhabitants.

After the wave of optimism produced by the results of the first months of the reform, a more sober appraisal of its positive and negative aspects is gradually beginning to prevail, both in China, and abroad. In this respect the words of an article in the influential paper TING TI ZHPAO (ECONOMIC NEWSPAPER) are very characteristic; it said that "China will be able to buy only that amount of foreign technology for which it can pay by its own exports, and not more."

Recently such terms as "the year of stabilization," or "the need to digest," or "the second round of the reform in 1987," and so forth have been appearing in the Chinese press. They are signs of a certain puzzlement among those who had brought the reform to life.

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ECONOMY

CZECHOSLOVAKIA

# RAW MATERIALS STRATEGY OF NATIONAL ECONOMY AND METALS DISCUSSED

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[Article by J. Lichnovsky, State Planning Commission: "Raw Materials Strategy of the Czechoslovak National Economy and Metals"]

[Text] Practically until the end of the 1970s, a characteristic of the present development of human society was the continuous growth of the need for raw materials of all types, particularly minerals such as ores, nonore raw materials, fuels and other energy sources.

Of the documented and economically extractable sources of minerals in 1981, 33 percent were taken by the socialist countries, 31 percent by the nonsocialist countries, and 36 percent by the developing countries.

In case of individual metals, this breakdown is as follows (in percent):

	<u>Socialist Countries</u>	<u>Nonsocialist Countries</u>	<u>Developing Countries</u>
Copper	13	29	58
Lead	18	67	15
Zinc	15	73	12
Tin	26	8	66
Nickel	30	22	48
Iron	34	35	31
Manganese	38	53	9
Chromium	6	65	29
Bauxite	3	25	72

The raw materials output of the majority of the economically developed countries is not sufficient to cover their needs, making them increasingly dependent on imports. This is typical of the United States, where the country mines an average of 25 percent of its overall consumption of individual metals and raw materials (in the case of energy, the figure is approximately one-third). The United States is trying to secure all rich and accessible raw material sources for itself (for example, the deep ocean floor, etc.), while it is saving its own resources and using the strategic resources to try to influence raw materials markets and prices.

## Tendency of Raw Materials Policies in the World

After the first and second "oil shocks," economic conditions in the entire world changed significantly. Not all countries reacted quickly to this. In the period from 1979 to 1985, there was an unusual increase in the indebtedness of the developing countries, from US\$80 billion to approximately US\$1,000 billion.

All the developed industrial countries are trying to orient their raw materials policies so as to maintain the lowest possible consumption of primary raw materials per production unit, with a maximum emphasis on products with a high usable value. This policy is reflected, however, in a deterioration in the economic situation, particularly in case of the developing countries, which to an overwhelming degree are producers of raw materials with a low degree of processing.

The era of "cheap raw materials" is over, in spite of the fact that the period from 1980 to 1984 was marked by price fluctuations, particularly decreases. A future increase in raw materials prices may be assumed, given that these prices predominantly oscillate around the costs of extraction, particularly in the case of metals.

All socialist and nonsocialist countries are re-evaluating the use of their raw materials; in their rationalization programs in this area, they are striving for a decrease, leveling off, or only a modest increase in consumption. Not even Czechoslovakia can stay outside of these efforts.

## The Raw Materials Strategy of Czechoslovakia

The Czechoslovak raw materials policy is an inseparable part of the entire economic policy of a socialist country. It is formed within the framework of socialist production relationships and production forces and in close conjunction with the present system for the planned management of the national economy. The policy is based on the proceedings of the 16th Congress of the CPCZ, the Seventh 5-Year Plan, and the focusing of our economic development on a long-term outlook.

As a part of the economic policy, the raw materials strategy represents a process of making decisions on managing and obtaining mineral raw materials resources, whether they are from a domestic raw material base, are imported, or come from other resources.

In addition to the basic goals of the raw materials policy, which must entail technically and economically justified and rational consumption and supplies of mineral raw materials that must fully meet the needs of effective development of the economy, the following issues must be addressed:

--the volume and structure of the demand for and possible supply of raw materials in a long-term outlook (particularly in cooperation with the socialist countries);



--the directions of scientific and technical progress in the process of mining, adapting, processing and consuming raw materials, as well as possible variants;

--evaluation of external and domestic conditions as they affect the obtaining of raw materials at home and abroad, and the necessary comparison of technical and economic conditions;

--the approach to secondary raw materials as they relate to effective substitution, ecology, etc.;

--the price policy for domestic as well as imported primary and secondary raw materials, including evaluation of price developments on the world market.

Addressing the complex long-term raw materials strategy of the Czechoslovak national economy will cover a vast range of problems that must be dealt with on the basis of a realistic evaluation of long-term developments.

The CSSR, with its advanced and broadly developed industry on the one hand and its not very complex raw material base and not very rich natural resources in raw materials on the other, is one of the countries that must import a significant volume of raw materials, fuels and energy. In 1983 alone, we imported raw materials valued at a total of Kcs 56.7 billion f.o.b. The structure of the Czechoslovak economy, which is focused on power-intensive fields (metallurgy, heavy industry, chemistry, building materials, etc.), has taken shape over decades and will continue to have a negative impact on the economy during the change from extensive to intensive development.

As a result, we have a relatively high quantitative level of production and consumption. We are among the countries that have high per capita consumptions of raw materials; we are currently first in the world in the per capita consumption of steel and other metallurgical products, in fourth place in fuels and energy (behind the United States, Canada, and the GDR) and in the production of cement (behind Spain, Italy and the GDR), and in the lead in the consumption of plastic materials together with the United States and other countries. This ought not always to be considered a positive factor, and cannot be said to be advantageous to society or economically beneficial. The inertial structure of the Czechoslovak economy makes high demands, particularly in terms of energy, metals, raw materials and inputs of all types. Decreasing present and future production consumption is the key to increasing the creation of national income and to accelerating the conversion from the extensive to the intensive development of the Czechoslovak national economy.

The 16th Congress of the CPCZ worked on the basis of the need to achieve dynamic growth of the Czechoslovak economy under the Seventh 5-Year Plan through wide-ranging intensification, productivity growth, lower energy and material consumption, as well as improving the balance of payments. Despite worsened external and internal conditions, this has in large measure been attained, though difficulties have been encountered in some cases.

The need for improvement in Czechoslovakia was made manifest by the developed industrial countries in the area of fuel, energy and metal management. In comparison, per unit of gross domestic product (GDP) (Footnote 1) (The following sources were used in constructing the information on GDP: Indicators of Economic Development Abroad, Prague, 1982; GDP figures were taken from a United Nations of the International Bank for Reconstruction and Development: 1981 World Bank Atlas, Washington, World Bank, 1981. The data is based on adjusted currency exchange rates, inflation, prices, interest rates, etc., for the period from 1978 to 1980. GDP for the socialist countries is calculated in a complicated manner on the basis of their national incomes) we use approximately 50 percent more energy resources (except as compared to the USA and GDR), which is apparent from the consumption of primary energy per capita and per unit of GDP in 1980 in tons of standard fuel equivalent (tmp/per capita):

USA	Japan	FRG	Austria	GDR	CSSR
10.41	3.69	5.73	4.16	7.41	6.48

The consumption of primary energy in tons of standard fuel equivalent per US\$1 million of gross domestic product (tmp/US\$mil GDP) is as follows:

USA	Japan	FRG	Austria	GDR	CSSR
916	414	430	406	1,026	1,112

These figures are influenced by the structure of industry and national economies, by the composition of fuel and energy resources, and by energy management of all types, including other raw materials. However, they unanimously show a lower economic effect in Czechoslovakia than in other countries.

The situation is similar in the case of the apparent consumption of steel (Footnote 2) (The international definition of the apparent consumption of steel = steel production + steel imports - steel exports (metallurgical products calculated in steel equivalent.) where significant changes to our disadvantage occur in comparison not only with the developed capitalist countries but with the countries of the Council for Mutual Economic Assistance (CEMA) as well, as shown in the following overview for 1980 (GDP in U.S. dollars):

	<u>USA</u>	<u>Japan</u>	<u>FRG</u>	<u>Austria</u>	<u>GDR</u>	<u>CSSR</u>
GDP in US\$ billions	2,587.1	1,039.98	819.12	76.38	120.94	89.26
Consumption of steel in millions of tons	115.6	73.44	33.78	2.66	9.75	11.15
Consumption of steel in tons per US\$ million of GDP	45	71	41	35	81	125
Relationship of CSSR in percent	36	57	33	28	65	100
Steel production per capita in kilograms	447	954	696	616	437	974
Steel consumption per capita in kilograms	508	629	549	354	583	729
Price per kilogram of machinery imported to the EEC countries in U.S. dollars	23.31	8.03	7.85	7.84	3.13	2.70

The total relative economical level (and hence basically the technical level as well) is aggregated using the gross national product as the indicator. The problem is that the data from the socialist and nonsocialist countries are not altogether the same because of differences in the methods used in determining GDP in U.S. dollars, but they are used mainly for an approximate comparison and to indicate development tendencies. It is difficult to compare the relative efficiency of individual economies. Perhaps the most reliable indicators are the terms of trade--at what value does a country export each kilogram, piece, or other unit of its commodities. All indicators used as international comparisons have primarily an indicative significance.

In the case of the apparent per capita consumption of steel as well as other metallurgical products, we are first in the world--by approximately 50 percent over the other compared areas. The production and consumption of steel is stagnating even in the other CEMA countries, which in comparison to the EEC countries, according to the UN Economic Commission for Europe, have approximately 3.3 times greater demand for metal per unit of GDP.

At the same time, we are forced, for the most part, to import the primary raw materials used in metallurgical production. The comparison of the steel consumption per unit of GDP is even more significant, because except for the GDR, this indicator is three times higher in the CSSR than in the other countries compared. This fact shows our economy's high demand for ferrous metals as well as the low evaluation of metal substance, which becomes even more evident in the comparison of the attained prices per kilogram of machines exported to the EEC, as well as of metallurgical products, over a longer period of time:

US\$ per kilogram	CSSR to EEC			EEC to World		
	1970	1980	Index	1970	1980	Index
Industrial products	1.15	2.70	235	2.11	7.42	352
Metallurgical products	0.13	0.35	269	0.18	0.53	294
Difference in US\$	1.02	2.35		1.93	6.89	

The kilogram price of industrial (and other) output is not only a complex indicator of material demands, but above all the sum of technical and economic characteristics and commercial capabilities in foreign trade.

The coefficient of metallurgical to industrial products (in ratio terms) is as follows:

	CSSR to EEC		EEC to World	
	1970	1980	1970	1980
A multiple	8.8X	7.7X	11.7X	14X

In the case of machinery, in 1980, we attained only 36 percent of the EEC countries performance (in 1970 it was 55 percent). For each kilogram of machinery not exported, we must export about 8 kilograms of metallurgical products (approximately 12 kilograms of fuel equivalent). In addition, the differences between the CSSR and the developed industrial countries in the case of export ratios apparent from the deterioration in the terms of trade, which has gradually been occurring in recent years. This is shown by the following figures (the development of real terms of trade--1970 = 100):

	1981	1982	1983
Export prices	173.7	178.4	182.3
Import prices	221.0	234.6	253.4
Real terms of trade	78.6	76.0	71.9

Therefore, the effectiveness of the creation of national economic resources shows rather significant differences between the CSSR and other industrially developed countries.

Czechoslovakia is showing only gradual improvements in the apparent consumption of steel. In other countries, this development is much improved (kilograms per capita):

	USSR	USA	Japan	FRG	Austria	GDR	CSSR
1980	560	508	629	549	354	583	729
1981	--	565	561	503	301	561	735
1982	--	363	538	436	281	569	724
1983	--	404	504	486	263	--	719

World steel consumption has increased from 107 kg per capita in 1960 to 155 kg per capita in 1980.

International comparison of the consumption of nonferrous metals shows that we are among the countries with an average value. Developments in some industrially developed countries in 1980 were as follows (kilograms per capita):

	Al	Pb	Cu	Zn	Sn	Ni	Total
USA	19.6	4.8	8.2	3.9	0.2	0.6	37.3
Japan	14.1	3.4	9.9	6.5	0.3	1.0	35.2
FRG	17.0	5.4	12.2	6.6	0.3	1.0	42.6
France	11.2	4.0	8.1	6.2	0.2	0.7	30.4
Austria	13.7	7.1	4.1	3.6	0.1	0.7	29.3
CSSR	13.4	3.8	7.1	4.6	0.3	0.8	30.0

Source: Metal Statistics 1971-1981, Frankfurt am Main 1982.

The per capita consumption of the most important nonferrous metals individually as well as overall in the CSSR is in roughly the same range as in the compared developed countries. However, it has a lower economic effect. This situation is more apparent in the comparison of their consumption in tons per unit of gross national product in 1980 (tons per US\$million of GDP):

	USA	Japan	FRG	France	Austria	CSSR
Nonferrous metals total	3.27	3.94	3.19	4.09	2.85	5.13
Ratio to CSSR in percent	64	77	62	80	56	100

The conclusion is the same as in the case of ferrous metals--a relatively high consumption with a low economic effect. The key to the solution is decreasing production consumption (in the CSSR it will amount to approximately Kcs 720 billion in 1985) as well as a high evaluation of nonferrous metals. In production consumption, in addition to the raw materials and other material inputs, cooperation is a significant component (internal as well as intermediate work shifts), and it is therefore difficult to determine the character and measure of savings. This is an area that has not been sufficiently worked out in economic theory.

The "energy barrier" and the "metal barrier" are relative as regards the high material and energy demands of the Czechoslovak economy in comparison with developed countries. The overcoming of raw material and particularly the energy barrier is especially topical. It is largely a question of how rapidly we will adapt the Czechoslovak economy to the changed conditions, how we will make effective structural changes, and above all how we will increase overall effectiveness and export capacity.

There are no absolute shortages of energy, metals and raw materials on the world market. It is a question of producing a sufficient amount of competitive export products in such a way to obtain the necessary volumes of imports.

At present and in the future, the national economy aspects of saving raw material resources, particularly by decreasing the energy and metal demands of the Czechoslovak economy by direct savings and rational management, have of course a strategic significance.

In the years from 1970 to 1980 in Czechoslovakia, the energy demands on the creation of gross national income have been decreasing by 1.9 to 2.9 percent annually. In 1980-1983, the consumption of primary energy resources was leveling off, and in 1984 consumption was actually some 0.7 million tons of fuel equivalent below the plan levels (cool weather, more dynamic economic development). For ferrous and nonferrous metals during the period 1970-1985, demand for the creation of gross national income was decreasing as follows (in percentages):

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>
Ferrous metals	--	1.7	1.9	2.9
Nonferrous metals	--	1.0	1.5	4.2

Of course, not by any means can all reserves be tapped easily, quickly and without cost. Sometimes, it is a long-term matter. For example, in each individual five-year plan, the costs of saving energy and fuel equivalents were evaluated as follows:

	Seventh 5-Year Plan	Eighth 5-Year Plan
Investment costs in		
Kcs billions	10-12	25
Savings in millions of tons		
of standard fuel equivalent	12	14

After the readily obtainable reserves of energy, metals and other raw materials are exhausted, the costs of the savings will increase.

The system-related measures assumed to be necessary are also not the final word on the issue. Optimizing the assortment of products made, effective international specialization and cooperation, investment to rationalize energy saving, the application of adequate financial and price policy instruments, and the actual system-related measures taken to help in this regard, should in all their complexity lead to more significant results than have been achieved so far.

On the other hand, there are also positive tendencies to be seen in the CSSR's halting the growth of absolute consumption of ferrous and nonferrous metals as well as other raw materials:

	1980	1985	Ratio
Ferrous metals in thousands of tons	9,578	9,043	94.4
Nonferrous metals in thousands of tons	458.1	407.4	88.9

Note: In 1980, the consumption of ferrous metals, amounting to 9,578,000 tons also consisted of 8,428,000 tons of products from steel and 1,157,000 tons of castings from gray and malleable cast iron.

In machine and electrotechnical production, the task was to achieve an annual decrease in relative consumption of metal materials of 4.5 to 5 percent, a goal that was successfully reached. However, as yet it is impossible to reliably quantify the share of individual factors--price increases, substitutions, technology, cooperation, specialization and others--in the decrease in consumption.

The SCP 03 State Goal Program--"Rationalization of Metal Consumption"--plays an active part in the decrease in relative consumption, and as indicated by the preliminary figures shown below, the current results of the goals set by the Seventh 5-Year Plan are satisfactory:

	Seventh 5-Year Plan	Percent	Eighth 5-Year Plan	
	Plan	Assumed fulfillment	Fulfillment	Proposal*
Ferrous metals in thousands of tons	1,982	2,342	118.1	2,350
Nonferrous metals in thousands of tons	56.4	72	127.6	68.4

\* The total figure for savings of ferrous and nonferrous metals will be made more exact in the Eighth 5-Year Plan.

In spite of these positive results, we continue to be first in the world in per capita steel consumption. This is partially influenced by the not very progressive distribution of the metallurgical products produced; for example, the share of flat products in the production of rolled material is 35.8 percent (worldwide it is 50-60 percent), the share of welded pipe in the production of steel pipe is 38.8 percent (worldwide approximately 60 percent). There is also a low proportion of progressive metallurgical technologies--continuous casting of steel (7.3 percent), the manufacture of steel in oxygen converters (41 percent)--in total steel production. In the world these values are around 40 to 50 percent. These are among the most progressive metallurgical technologies and their share is constantly increasing.

Accelerated application of scientific and technical progress should be reflected in a relative decrease in the consumption of metals, energy and other raw materials. It is necessary to prepare for a basic reorientation of the Czechoslovak economy to the modern structure of manufacturing industries and services. Otherwise, a vicious circle occurs--production for production--in which there is a constant and costly effort to increase energy and other raw material resources, undermining the ability of the economy to solve its raw materials, fuel and energy problems through innovation, structural change and modernization of its manufacturing industry as well as the entire national economy. This eases the pressure placed on the development of raw material deposits and on the generation of foreign exchange to pay for importing them.

The anticipated development of the Czechoslovak economy resulting from the "Fundamental Directions of Economic and Social Development of the CSSR in the years 1986-1990 and up to 1995" is predicated on a more dynamic creation of national income after 1985.

There are basically two ways for this to be achieved:

--more rapid growth of the social product (the continuation of extensive development);

--more rapid decrease in production consumption by intensifying the economy.

It is apparent that a future high rate of development may not be assumed on the basis of other material inputs. For example, 1 percent growth of the national income in 1970 was Kcs 3.11 billion, while by 1980 it was already Kcs 5.05 billion and in 1990 it will be Kcs 6.65 billion; it is assumed that it will be Kcs billion in 2000. This shows how demanding the creation of gross national income is, as 1 percent growth in 2000 should equal approximately 3.2 percent growth in 1970.

One critical source of foreign exchange is and should continue to be our machine tool industry. In 1980, the volume of exports and imports in thousands of tons was:

	Machinery and equipment	Ferrous metals
Exports	1,456.7	3,440
Imports	661.4	693
Balance	795.3	2,747

In the form of machines and ferrous metals, we have exported over 7 million tons of fuel equivalent. In the future, the share of both of these groups should significantly decrease. It would be necessary to achieve significant improvements in quality in all export products (not just machine tools) in order to achieve significant decreases in the costs of energy, metals, raw materials and other inputs needed for their manufacture. It is much more effective for the Czechoslovak economy to concentrate on increasing the usable value of the exported output of the manufacturing industry in the course of a low rate of development, than to increase export volumes by a high rate of industrial production marked by a stagnation of quality.



Therefore, a decisive trait of the intensification of the entire production process proves to be the need to increase the quality of mass production while maintaining a broad application of the product and technological innovations. This is the path taken by Japan, which attained high technical and economic levels for its output and, aided by significant buying of licenses, also moved into second place in the world behind the FRG. It is apparent from this that the growth rate, of industry for example, is not decisive, but that what is decisive is a better evaluation of fuel, energy, metals and other raw materials used in production. This would allow us significantly to increase the average prices per kilogram in U.S. dollars on foreign markets.

External economic relations represent basically the sole measurement condition for the entire Czechoslovak economy and are therefore an unmerciful reflection of results in the economic and technical sphere. The risks of future development lie in the ability to adapt the manufacturing industry (mainly machine manufacturing) more rapidly to the more demanding conditions of foreign buyers and thereby sell these products; it also lies in ensuring sufficient supplies of energy and the raw materials needed for the presumed development, particularly after 1990.

#### Position of Metallurgy in the Czechoslovak Economy

Metallurgy holds a key position in the national economy as a material basis for further developing the machine manufacturing, construction and other fields. It is apparent that metals will continue to be a principal construction material until at least 2000 and that plastics and other materials can replace them only in a limited way. At the present time, the export of metallurgical production is not without its significance.

Because the main consumers of ferrous metals (approximately 65 percent) as well as nonferrous metals (approximately 90 percent) metals are the fields of machinery manufacture and the electrotechnical industry, the estimates of their prospective needs for metals is an outgrowth of the development of heavy and general machine engineering, and machine manufacturing, where the annual rate of production after 1985 could reach 4 to 6 percent, and in the case of electrotechnical industry 8 to 12 percent, which will be affected mainly by the development of electronics. The risks affecting the development of these fields lie in the economic utilization of their output and in the sales capacity on the world market in the face of a sharp innovative trend in the developed countries which we have not yet been able to counteract.

In 1980, the utilization of metals in machine manufacturing amounted to 79.5 percent, which is in the same range as for the GDR, USSR and other socialist countries. In developed capitalistic countries, it is approximately 85 percent (according to the United Nations' Economic Commission for Europe).

Our machine manufacturing products are 10 to 60 percent heavier than those manufactured abroad. We have significant reserves in this area in terms of quality and parameters, as well as in the area of metallurgical products needed for such manufacturing (the share in the deterioration of consumption is approximately 10 percent for the assortment, quality, etc.).

In machine manufacturing, the influence of individual factors on savings of metals was evaluated as follows:

- 70 percent design engineering,
- 20 percent preproduction,
- 10 percent other influences.

Design engineers and technicians make up only 3.1 percent of the total number of workers in machine manufacturing. On the other hand, they influence the material costs by 70 to 80 percent, the top salaries by 60 percent, etc. From the standpoint of technology, forming accounts for 13 to 15 percent and machining 85 to 87 percent. In developed countries, progressive technology--forming--accounts for 25 to 30 percent and machining 70 to 75 percent, which decreases the consumption of metals.

The share of construction in the total consumption of ferrous metals is approximately 20 percent; in the case of nonferrous metals it is significantly smaller. Considering that construction is supposed to be growing by a maximum of 2 to 3 percent annually and the consumption of metals in other fields is relatively small, there should not be any growth, but rather a decrease. This is contingent on the growth rate of individual fields equalling at least the rate of savings of metals.

In connection with management of metals, the costs incurred by losses resulting from corrosion are not insignificant either. For example, in 1980 these losses amounted to Kcs 15 billion, while approximately Kcs 10 billion was spent for anticorrosion protection. Thus, we annually lose approximately 500,000 tons of metal. In the FRG, corrosion causes more than DM 40 billion of economic loss, and it is obvious that this is a serious problem the world over.

#### The Development of Ferrous Metallurgy in the World

There is a trend under way throughout the world toward saving fuel, energy, metals and other raw materials. This is also apparent from the development of world steel production since 1979, when the highest output to date was obtained:

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Millions of tons	747	718	707	644	661	703

In 1984, the Soviet Union had the highest production--154 million tons.

As opposed to the original optimistic forecasts, which included calculations, for example, that steel production in 2000 would be around 2 billion tons. It is now possible to draw much more realistic conclusions for individual economic groupings. On the basis of current knowledge, possible steel production in the world is as follows (in millions of tons):

	<u>1980</u>	<u>1990</u>	<u>2000</u>
World overall	717.6	760-810	810-910
of which:			
CEMA	209.5	220-230	230-240
EEC	127.7	135	140
USA	101.7	105	110
Japan	111.4	115	120
Industrially developed countries	616.7	640-650	660-670
Developing countries	100.9	120-160	150-240

It may be assumed that steel production in the CEMA and EEC countries, the USA and Japan will be increasing only slightly or perhaps stagnating. This is consistent with the worldwide trend toward concentrating on quality, high usable value, as opposed to quantity of production.

In view of the ever growing debt problem and high power and investment demands of metallurgical production, it is improbable that steel production will develop more rapidly in the vast majority of developing countries. Another risk factor is the rate of price growth of fuel and energy, and possibly other raw materials. For the majority of raw materials and other materials (excluding fuel and energy), the price increases since 1972 to the present have been roughly equal to inflation in the developed industrial countries. It cannot be assumed that a possible revitalization of economic activities in the capitalistic countries will be followed by a more significant increase of consumption of metals, energy and other raw materials.

#### The Development of Czechoslovak Metallurgy

Considering current developments in metal consumption, the development of decisive fields and the need to intensify the Czechoslovak economy, we assume the following preliminary volume of metals (in thousands of tons):

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Ferrous metals (total)	9,578	9,043	8,900-9,000	8,600-8,800	8,200-8,600
Nonferrous metals					
(total)					
(Al, Cu, Pb, Zn, Sn, Ni)	458.1	407.4	410-420	410-420	410-430

One of the possible scenarios for the development of Czechoslovak metallurgy, based on 3.5 percent annual growth of gross national income and 4 percent after 1990, is as follows:

	<u>Unit</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Consumption of ferrous metals	000 tons	9,578	9,043	8,900	8,700	8,400
Consumption of non-ferrous metals	000 tons	458.1	407.4	415	415	415
Gross national income	Ksc bil	505	560	665	809	984
Demands on national income for ferrous metals	t/Kcs bil	18,966	16,384	13,534	10,754	8,537
Average annual decrease in ferrous metals	Percent	2.2	3.2	3.7	4.3	4.5
Demands on national income for nonferrous metals	t/Kcs bil	907	728	624	513	422
Average annual decrease in nonferrous metals	Percent	1.5	4.3	3.0	3.8	3.8
Steel production	000 tons	15.2	15.0	14.1	13-14	12-13
Steel consumption	000 tons	11.2	10.5	10.3	9.9	9.4
In kilograms per capita	kg/per cap.	729	677	659	627	587

Even in this case, steel consumption in kilograms per capita in 2000 would be higher in Czechoslovakia than for example, in the USA, FRG, Austria, GDR and other countries in 1980.

#### Czechoslovak Resources of Primary Raw Materials

The situation of primary resources is contingent upon the metallurgical wealth of countries as well as upon the intensity of geological research activity. The CSSR does not have enough ore deposits (with the exception of uranium). Our country may be said to have mainly small and poor deposits.

The deposits of domestic iron ores are small and the iron content is low. The deposits cover only approximately 4 percent of the entire consumption of iron ore materials. The mining of manganese ore was halted because of low effectiveness. Similarly, the deposits of nonferrous metals are insufficient and have a low metal content. In comparison to the rest of the world, the technical and economic level of extracting and processing ores in the CSSR is characteristic not just of "small deposits" but of lower metal content of the ores as well. This is apparent from the overview of the base metal contents in extracted ore (in percent):

	<u>CSSR</u>	<u>World</u>
Copper	0.67	Over 1.00
Lead	1.25	2.21
Zinc	2.04	5.00
Antimony	1.43	3.65
Tin	0.17	0.53
Mercury	0.23	0.50

The economic level of ore extraction and processing is also influenced by relatively small plants, which extract annually approximately 2 million tons of iron ore, 800,000 tons of copper, 400,000 tons of SnW, and 800,000 tons of polymetallic ores, etc.

The expected life of the deposits of primary metals at 1980 consumption levels is as follows (in years):

Iron	554	Zinc	27
Nickel	1,422	Tin	42
Copper	59	Aluminum	298
Lead	32		

The situation worldwide is not so critical because there are a large number of insufficiently surveyed areas, for example the bottoms of deep seas, Siberia, Alaska, Canada, Austria and others. Acceleration of the growth of identified deposits in the world is higher than their depletion by mining.

There is a certain significance in the CSSR's deposits of tin tungstate ores, lithium and some other metals. In the future mining of ores, we must concentrate ourselves on the decisive deposits. The renaissance of ore mining must be understood to have as its goal focusing extraction on covering a higher proportion of the domestic raw material basis in order to decrease the demand for foreign exchange, not at any price, but for economically acceptable costs. Finding richer ores and larger deposits cannot be expected. Mining and processing, including the production of nonferrous and ferrous metals, demands the construction of extremely demanding equipment and difficult mining and metallurgical work, which is preceded by demanding geological surveying. Therefore, all these questions must be carefully evaluated from the standpoint of the national economy.

#### Importing of Primary Metallurgical Raw Materials

At the present time, we import more than Kcs 15 billion f.o.b. of ore raw materials, metals and metallurgical products. We manage to cover 80 percent of the needs for iron ore materials from the USSR, which also covers a large share as regards manganese and chromium ores and other metals. It will be more and more costly to maintain the present import levels, even from the socialist countries, or to give significant investment credit for some commodities which require the increasing use of raw materials. In the future, inefficient exporting of nonferrous metal concentrates will be eliminated and processing will be done domestically.

Prospectively, it is apparent that during a stagnation or a decrease in the consumption of ferrous and nonferrous metals, there occurs an absolute decrease in imports with higher utilization of the domestic ore base, particularly the secondary sources of metals. Except in the case of the socialist countries and countries with a socialist orientation, joint ventures in obtaining metals are not expected, except for direct imports.

## Secondary Raw Material Sources for Metals

In the 1970s, the whole world was re-evaluating its approach to secondary raw materials in light of the raw material and particularly the energy crisis, and the rapid price increases of energy and other materials. To observe and adapt to these trends is becoming a necessary part of state raw materials policy in industrially developed countries.

The emphasis placed on more exact evaluation of secondary metallic raw materials is an objective phenomenon caused by:

- limiting and decreasing the attainable natural resources, including the possibilities of exhausting some deposits of primary materials and energy;
- the growth of industrial production, and thus the resulting increase in the need for raw materials in the developed as well as developing countries;
- higher economic effectiveness in the utilization of secondary raw materials as compared to replaceable primary raw materials;
- decreasing foreign exchange demands, possibly by credit participation in the process of obtaining primary raw materials, and reducing the dependency on imports;
- efforts to decrease energy consumption in processing, which is significantly lower in case of using secondary raw materials;
- paying attention to the ecological side of the problem and environmental protection.

The above-stated factors have various degrees of influence on the industrially developed countries as well as nonsocialist countries. Practice proves that there is no country in the world that is rich enough to allow itself not to make optimum use of its secondary raw material resources.

In value terms, the most important item in the secondary raw materials in Czechoslovakia are metals with an approximate 60 percent content and which also have characteristics such that they can be fully regenerated and are fully comparable with primary metals, which cannot always be said about other secondary raw materials.

In terms of the national economy, it is desirable in the future to decrease the amount of waste to a technologically necessary level, and perhaps even to introduce waste-free or low waste technologies.

In addition to iron ore raw materials, the total steel and cast iron waste is a decisive raw material input in the production of steel (43 percent share) and castings (53 percent). On the basis of these productions, the introduction of progressive metallurgical technologies (continuous casting, oxygen converters, secondary metallurgy, etc.) and other influences, it is possible to determine the volume of production waste with a satisfactory degree of accuracy. In the future, it will be decreasing because of the decline in metallurgical production, as well as a better utilization of metals in the entire metallurgical cycle.

In the course of decreasing the consumption of ferrous metals and increasing the share of forming, improving the utilization of metals, etc., it is necessary to assume a decrease in the amount of processing waste.

The most complicated issue is the determination of the real volume of consumer waste (amortization) which results from public collection efforts, from repairs and liquidating consumer goods and liquidating machine/capital/fixed assets. The citizens' collection (from the population) will probably stagnate for a long time at the present level, which is 500,000-600,000 tons per year. The liquidating of machine capital assets should increase by approximately 30 percent in the Eighth 5-Year Plan and approximately 100 percent in the Ninth 5-Year Plan as compared to the Seventh 5-Year Plan.

From the growth of the metal assets and the turnover (exchange within a certain period of time) it is possible to determine the total volume of consumer iron waste in that the metal assets consist in all products made from steel and cast iron, i.e., machines and equipment, metal construction, transportation means, consumer goods, unfinished production, etc.

According to current knowledge, the following development of metal assets in the CSSR may be anticipated:

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Metal assets in millions of tons	98.75	112.46	123.9	131.97	136.9
Turnover of metal assets (in years)	26.8	27.7	28.0	26.7	26.0
Consumer waste (in thousands of tons)	2,100	2,280	2,480	2,840	3,120
Metal assets in kilograms	6,460	7,240	7,740	8,090	8,200

The turnover of metal assets is disproportionately long; in developed countries it is shorter by 10 years because of the more rapid turnover of machine capital assets. In the CSSR, the life expectancy of machines is lengthening in this way, with the resulting occurrence of physical and moral aging of capital assets with all the technical and economic consequences for the entire economy.

The metal assets in the CSSR are calculated using the so-called metal investment method of the CEMA. This means that for calculating growth only the production of raw iron (as well as steel) from natural ferrous oxides, i.e., from new metal, is considered. Excluded are:

--The production of raw iron from secondary Fe;

--Irretrievable losses in metallurgical production and during the manufacture of metallurgical products from steel and cast iron;

--The balance of export and import of metallurgical products, including raw iron, steel, iron scrap and machine products;

--Losses from corrosion and abrasion (0.9 to 1 percent of the metal stock of the CSSR);

--Inaccessible and partial collection of iron waste.

To a large degree, it is a matter of the structure and technical standards of the metal assets and their utilization in the national economy.

Using the methodology of the CEMA countries, world metal assets were calculated as follows:

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Metal assets in millions of tons	4,788	6,061	7,301	7,518	7,708	7,895
Metal assets in kilograms per capita	1,320	1,510	1,650	1,670	1,680	1,690

In some nonsocialist countries, metal assets are calculated in a similar way, with the difference that the growth of metallurgical products is in general taken into account (instead of iron), which duplicitiously includes old metal as well.

Data on the metal assets for some countries as compared to the CSSR (available data from the UN's Economic Commission for Europe) are as follows:

	CSSR 1980	USSR 1977	USA 1977	France 1977	FRG 1977	Japan 1977	Great Britain 1977
Metal assets in millions of tons	98.8	1,262.5	2,566	305	599	559	362
Metal assets in kilo- grams per capita	6,460	4,860	11,800	5,800	9,040	4,900	6,500

It is assumed that saturation with metal occurs at 8,000 kilograms per capita.

From the total possible metallurgical production, the consumption of ferrous metals, citizen collection and the development of metal assets, the following incidence of steel and cast iron waste can be derived (in thousands of tons):

	1980	1985	1990	1995	2000
Production waste	4,336	4,220	3,870	3,560	2,000
Manufacturing waste	1,492	1,440	1,430	1,390	1,340
Consumer waste	2,100	2,280	2,480	2,850	3,120
Total	7,928	7,940	7,780	7,800	7,660



There is a large reserve in the process of taking machines and equipment out of circulation (hundreds of thousands of tons annually of additional iron waste), thereby shortening the turnover of metal assets. For example, in 1967 our turnover of metal assets was 21 years, and since then it has been continuously increasing.

In the future, we must assume that secondary sources of metals must be fully utilized and, when used in the production of steel, could even have an edge over primary raw materials (raw iron). This condition could occur in the metallurgy of iron around the year 2000, and it will be necessary to use all progressive technologies in order fully to process the total waste of ferrous and nonferrous metals. The potential reserves for increased utilization of secondary metals are reasonably large in Czechoslovakia, particularly in the case of nonferrous metals, wastes of alloy steels, light ash, sludge, and quicker taking out of circulation and liquidation of machinery and equipment, etc. However, this is no simple matter, and is costly as well. On the other hand, the savings of fuel and energy, raw materials, foreign exchange and other resources uniformly point to the advantage of the maximum utilization of secondary sources of metals.

It is necessary to base the formulation of raw materials policy in the area of metals, in harmony with the strategic aims for the development of the Czechoslovak economy and its necessary intensification, on the following premises:

--In the future, the need for ferrous metals must be decreased. In the case of nonferrous metals, it could in the future either stagnate or slowly increase depending on individual metals;

--It is anticipated that by the end of the century those industrial fields which will need relatively small amounts of metals (electrotechnology, electronics, robotics) should be growing at the fastest rate. The main consumer for them will continue to be the machine and electrotechnical industry, and, to a lesser degree, construction;

--The stagnation of or decrease in the need for metals should prospectively manifest itself in a decrease in total metal imports while anticipating an increased utilization of the domestic raw material base for primary as well as secondary sources;

--Scientific and technical progress should manifest itself in a relative as well as absolute decrease in the consumption of ferrous and nonferrous metals per unit of national income. On the basis of international comparisons, we have significant reserves in this regard;

--In future, there will be an absolute decrease in exports of ferrous metals, and exports of nonferrous metals are not anticipated. An extension of a mutual exchange of metallurgical products among the member countries of the Council for Mutual Economic Assistance is anticipated;

--The considered increase in the mining of ores from the domestic raw material base and the increase in their share in meeting the total needs for individual metals should manifest itself as a stabilizing factor in the Czechoslovak economy;

--There will be a continuous increase in the use of secondary sources of metals while focusing on the decrease of material costs and saving of energy and investments, savings of foreign exchange, and efforts to deal with the questions of the living environment;

--It will be more and more complicated to tap imported sources of metals and ores because of the possible decrease in quality as well as accessibility indicated by the costly and often necessary investment cooperation in order to maintain or even extend deliveries. Therefore, we cannot rely on extensive enterprising abroad, which furthermore will be limited mainly to the socialist countries.

In the Czechoslovak raw materials policy in the area of ferrous and nonferrous metals, the following priorities appear to be economically most effective on the basis of present knowledge, whether based on practical experience or economic research:

1. To focus the main efforts and savings of metals of all kinds on mining, processing and final rational utilization in products having a high usable value;
2. To pay full attention to the collection and processing of secondary ferrous and nonferrous metals as the least expensive domestic raw materials;
3. To develop in a useful way the domestic primary raw material base of metals and to concentrate on selected deposits;
4. To directly purchase metals on the basis of mutual suitability. To broaden cooperation with the member countries of the Council for Mutual Economic Assistance in barters, specialization and cooperation in metallurgical production;
5. When necessary, to buy metals from abroad using credit from the CEMA countries and other socialist countries.

The national economy aspects of the savings of raw material resources--particularly metals--must be based on the strategic intentions to decrease the share of production consumption (particularly the material components) in the social product more quickly than in the past. This is doubly true in case of the CSSR, a country with an uncomplicated raw materials base and a processing-oriented economy. This is one of the basic directions of converting the Czechoslovak economy from an extensive to an intensive development in harmony with the conclusions of the 16th Congress of the CPCZ, focusing on the Seventh 5-Year Plan and the directions of national economic growth after 1985.

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ECONOMY

CZECHOSLOVAKIA

#### MARKET RESEARCH DEEMED INADEQUATE IN STUDY

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[Article by Docent Eng Karel Herman, Prague, Eng Dagmar Klikova, Eng Jaruse Vydrova, Institute of Technical Development and Information, Prague: "Market Research Study"]

[Text] Last year the Czechoslovak Commercial and Industrial Commission [CSOPK] conducted an extensive study of its membership through the working committee for market research. The study posed the following questions: Do you know enough about what consumers actually want? What they actually need? Do you have enough information to target exports effectively to the needs of foreign markets and to effectively meet domestic market demand? Our marketing experiences suggest that this may not always be the case. Shortages of appropriate goods on the shelves and for export are not always caused by a lack of production capacity. What is more often lacking are accurate estimates of the evolution of the demand structure. The authors of the study contacted 740 respondents (and achieved a return rate of 77.4 percent) from among production, commercial and R&D organizations. The study confirmed that economic organizations make little use of market research to improve their projections of customer demand.

Market research is again gaining in importance as a way to increase the efficiency of the capital replacement process. There is sometimes talk of the need to conduct research on consumer demand in domestic sales outlets, and at other times of research at test marketing outlets of production firms. Sometimes there is even mention of improving foreign market research. But what is actually meant by the term 'market research' or 'demand research' (the terminology is not uniform)?

The main objective of market research is of course to determine probably consumption levels. It should constitute the starting point for the conceptualization of an appropriate policy for the development of production, making innovations in the product mix, for the introduction of new products to the market, for distribution in the trade network, determining proper uses for products, etc. What, however, is the reality?

Let us take, for example, the ongoing problem of freezers, which has existed since they came on the market in 1969. Obviously no one spent the time to

predict future sales potential or the possibilities for increasing potential sales through consumer education. For a long time this advanced product was difficult to sell, which led to restrictions on its production. Subsequently production schedules failed to catch the turnaround which then occurred in demand for these items. Now, for a change, there is a shortage of freezers because rapid changes in production technologies and material inputs are causing considerable difficulties. This is why even more attention should be paid to market research and the management of production and trade policy, so that such difficulties can be avoided. The market introduction of mixers in the early 1960's, for instance, was quite effective precisely because it had been preceded by research and the mixer design actually incorporated the research findings.

### Marketing Problems

To the question of what the main problems in sales are 19 percent of the organizations responded that they have no problems in exporting to socialist countries, while 12 percent have no problems in exporting to nonsocialist countries. The remaining organizations meet with many difficulties which differ in nature depending on where their sales are targeted (see Table 1.)

Table 1. Seriousness of Problems by Market Area (in percent)

<u>Problem</u>	<u>Domestic market</u>	<u>Socialist countries</u>	<u>Nonsocialist countries</u>
Difficulties in satisfying the scope of demand	36.6	28.0	13.7
Difficulties in meeting product mix and quality standards	28.6	25.3	31.0
Problems in servicing and spare parts deliveries	8.0	10.7	8.3
Problems with delivery times	18.8	16.0	21.2
Pricing problems	8.0	20.0	25.8
	100.0	100.0	100.0

Source: Materials of the CSOPK

In domestic sales (between socialist organizations and final consumers) the greatest problems are in satisfying the scope of demand; secondly, meeting requirements for quality; and, thirdly, keeping to scheduled delivery times. Overall, however, changes can be noted in the order of importance of these difficulties, especially in different sectors. In the consumer goods and food industries the greatest problems in domestic marketing are those related to consumer demands for product variety and quality, while in the general engineering and electrotechnical fields service and spare parts problems are the

most important. The food industry is also bedeviled by pricing problems. Domestic trade--even though this contains the lowest percentage of organizations which allegedly have no problems with marketing (only 13 percent)--has, in addition to problems with product mix and product quality, also large problems with the level and regulation of prices and with compliance with delivery terms.

The seriousness of marketing problems likewise influences production objectives. For instance, consumer goods producers experience their greatest problems in assuring the requisite structure and quality of output (31 percent). Only 11 percent of the capital asset manufacturers find such difficulties to be part of their overall problems. Capital asset producers, on the other hand, have more serious problems with service and spare parts (16 percent reported this as a problem), while such problems do not greatly affect a consumer goods producer (3 percent).

The market focus of a producer, i.e. whether his primary orientation is towards the domestic market or towards exports, also has an impact on the seriousness of domestic marketing problems. Producers heavily involved in the fulfillment of export targets, and especially those which have a high quota of exports to nonsocialist countries, tend not to experience problems with the structure, level or scope of supply or with delivery schedules in their domestic deliveries. It seems that such enterprises are more demanding in what they do. On the other hand, organizations mainly oriented to the domestic market are more lax in dealing with organizational and production shortcomings.

This does not mean, however, that these producers do not experience any problems. As Table 1 shows, in exporting to nonsocialist countries almost one-third of all organizations experience problems with the product mix and technical sophistication of their products. Exporters also come up against price barriers more frequently, and have serious problems from a lack of discipline in meeting delivery schedules, (especially in the consumer goods industry). Exports of the chemical industry are somewhat exceptions to the rule in the sense that production facility limitations are more often the greatest obstacle.

Exports to socialist countries face approximately the same order of problems as those experienced in domestic marketing. On the whole there are fewer of these, with pricing problems the only ones that are increasing to any great extent.

The purpose of this research was not to analyze the reasons for the obstacles faced in the marketing of goods by producers and trade organizations which result either in the inadequate satisfaction of domestic demand or which block the development of efficient exports. The research was designed solely to determine to what extent economic organizations utilize market research with sufficient lead time.

#### Lack of Knowledge of Needs

We are all inclined to put a positive evaluation on our own work. For this reason the answers received to a simple questionnaire on the level of knowledge of economic organizations concerning the needs of domestic consumers and users and the requests of foreign consumers were relatively positive.

Table 2. Level of Market Knowledge by Market Area (in percent)

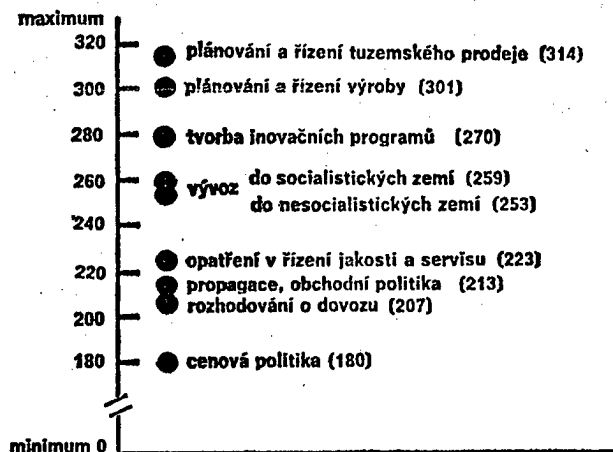
<u>Level of market knowledge</u>	<u>Domestic market</u>	<u>Socialist countries</u>	<u>Nonsocialist countries</u>
Very good	22.8	11.1	5.5
Good	62.9	46.0	40.6
Orientational	11.5	33.9	38.8
Inadequate	2.8	9.0	15.1
	100.0	100.0	100.0

More than 85 percent of the respondents felt either good or very good about their level of knowledge of the domestic market. In the internal trade sector the figure was even 100 percent, although only 13 percent of these respondents put their knowledge in the very good category. In comparison with these figures the level of market knowledge regarding the needs and demands of foreign consumers, above all those in production organizations, was substantially lower.

The main source of information concerning the needs of domestic consumers are direct discussions with these consumers. In this way management by request is being replaced by research on the needs and attitudes of final consumers. Because market research is still frequently understood as research concerning current demand, during discussions with internal trade organizations producers tend to rely too much on the information provided by these organizations and do not do much research on the extent to which these consumer demands reflect reality. The level of market knowledge of foreign trade organizations responsible for imports has also been shown to be unsatisfactory from this viewpoint.

The main source of information concerning foreign consumer demand are reports produced by foreign trade organizations. Most enterprises use these reports as their sole source of information. As a result producers lack a lot of important information, primarily of a predictive, production and pricing nature, that is essential in order to plan exports and to develop appropriate product mixes for different areas.

The answers to this questionnaire contain numerous requests for an expansion and increase in the quality of the work of foreign trade organizations in market research. It is noteworthy that economic organizations are less well informed concerning export potential to socialist countries than they are concerning the requirements for exporting the nonsocialist countries, even though the structure of our foreign trade would suggest just the opposite. The reason for this appears to be that commercial negotiations with socialist countries are for the most part concerned with the fulfillment of long term contracts for large, very important groups of goods. It also appears that efforts are concentrated on negotiating exports and imports for the current 5-year plan and, when conducted at the end of such a period, for the following 5-year plan. There is no supportive environment for either shorter term or longer term projections.



Graph No 1. Opinions on the Potential for Utilizing Market Research in Specific Areas of Managerial Activity

Key:

maximum

- 320 planning and management of domestic sales (314)
- 300 planning and management of production (301)
- 280 development of innovative programs (270)
- 260 exports to socialist countries (259)
- to nonsocialist countries (253)
- 240 measures related to management of quality and service (223)
- 220 advertising, commercial policy (213)
- decision making concerning imports (207)
- 200
- 180 pricing policy (180)

minimum 0

Note: resultant point scale from 5-degree scale, research among CZOPK members

In addition, trade organizations have not been taking sufficient initiative in expanding the sales of greater numbers and newer types of consumer goods which would mean, assuming that balance is achieved in terms of value and volume, a significant expansion in the mix of products available on the domestic market. However, the necessary information base, one based on market research and the delivery capabilities of individual partners, has yet to be created to support any cooperative production arrangements. The necessary steps should be taken to achieve this, based on the responses to our questionnaires.

There is no alternative but to state that the level of information available to organizations concerning consumer requirements only appears to be good, and that this relatively positive evaluation may be attributed to the pragmatic style of management that has predominated so far.

#### Trade or Production?

Under the law governing domestic trade, No 127/1981, Sbornik, trade and production agencies and their organizations share the responsibility for meeting citizen demand on the domestic market. Under this law trade organizations are responsible for researching the domestic market and its consumer demand and for channeling this demand to conform to the developmental needs of a socialist society. The above law does not more closely specify the responsibilities of production sectors; it instead directs them to develop the conditions for fulfilling their functions in domestic trade as a mediating link between production, distribution and consumption and in the satisfaction of citizen requirements.

These formulations have led certain production sectors and organizations to form the opinion that domestic trade enterprises are required to obtain all the necessary information concerning the current and future preferences of consumers. They frequently have no sense of what role they, as producers, should play in this research. The opinion is prevalent that the basis of this research lies in the activities of the research sales outlets. The function of these facilities in market research is important but only partial.

Production organizations require market research primarily for planning domestic sales, as well as for planning production, formulating or modifying innovative programs and, finally, to focus export activity. If one leaves aside for the moment the problems of the significant underestimation of the importance of a base of information to the management of trade policy and the relatively minimal weight accorded to market research in the management of pricing policy, it may be stated that our respondents thought that market research would best be utilized both in the management of domestic and foreign sales and in the management of both production and R&D programs. At the same time it must be realized that the objective of trade organizations in market research and in its integration with specific decision making processes is somewhat different from the information requirements of a producer.

Domestic trade organizations, in contrast to producers, have the potential for obtaining a picture of the evolution of consumer demand for all lines of consumer goods, for both domestic and imported products, which makes it possible



for them to document all relationships and proportions in the overall demand on the domestic market. Retail trade employees are the closest people to customers for this purpose.

These advantages of trade organizations are irreplaceable for mapping the capacity of the domestic market. It should not be overlooked, however, that employees of domestic and foreign trade sectors naturally transfer these findings into demands on producers that correspond to their own group interests and motivation. The latter need not be (and often are not) identical with the interests of the final customer. Nor can they know when conducting research the specific conditions of production and the possibilities for adapting it to market requirements.

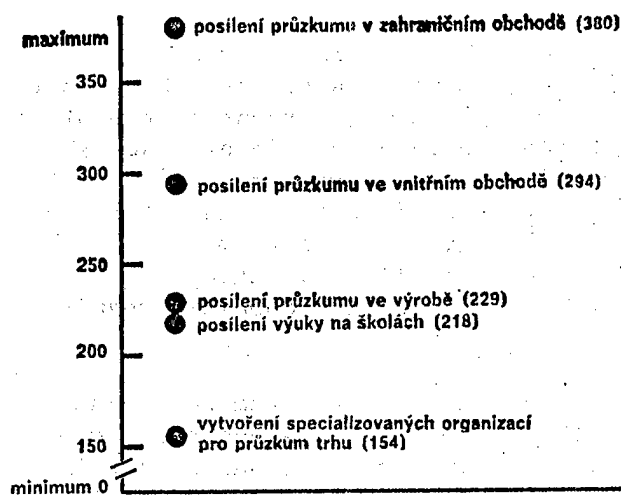
Production organizations are the closest to a product, to its creation, characteristics, and to the possibilities for improving it. These are, actually, relatively favorable preconditions for a production or innovations policy. In preparing a functionally different and new products for market it is necessary, for instance, to obtain suggestions for the new products, test the proposed domestic market requirements and export potential. Market research should be very closely tied in with these innovational activities so that it would be possible in later developmental phases to react immediately to any new findings. Concrete production research should therefore be implemented in production, even though in many instances the methodological and organizational preconditions may not have yet been developed in many instances.

Further questions of an appropriate division of labor relate to forecasting research. Domestic trade forecasts are designed to clarify the directions that may be taken by future purchasing power of the general public, and foreign trade projections for determining the overall proportions and balance of future exports and imports. The objective of production projections is mainly to clarify the interrelationships between evolving demand and technical progress, the development of production facilities, technologies, raw material and material resources, etc. Both perspectives should interact with each other, thereby overcoming a barrier that currently exists because of differences in the composition of the monitored components of commercial and production nomenclature.

For producers to make long term decisions regarding production priorities and the procurement of the requisite inputs they must know the projected capacity of the target market to absorb their product. They must determine the current and potential users of these items, the types of consumers which do not purchase their product and why, and what is and may be the position of competing products. In addition they must know what influence the properties of the product will have on its price, on the development of demand, or alternatively how the product should be designed so that it will correspond to the needs and purchasing power of the potential users, and how commercial policy should perhaps be directed to successfully introduce a new product.

Because production organizations do not have this information regarding both domestic and foreign markets, they tend to make conservative decisions concerning the size of production runs and introductory advertising. This leads to a situation where a new product either goes immediately into short supply or is introduced so unassertively to the market that sales develop more slowly than they might. There is no merit to the argument, then, that market research is not necessary because of an imbalanced situation in the market. On the contrary, a shortage of reliable information often contributes to this lack of balance.

Our study indicated clearly that market research is an essential aspect of production. Moreover, our respondents also view it as a major way to improve the performance of commercial sectors and, in view of the low level of knowledge of foreign markets, particularly for foreign trade organizations (Graph 2). The question of information flows and the ways this information is used are matters for agreement with producers.



Graph No. 2. Recommended Measures to Increase Sophistication of Market Research

Key:

maximum	improving research in foreign trade sector (380)
350	
300	improving research in domestic trade sector (294)
250	improving research on production (229)
	improving training in schools (218)
200	
150	setting up specialized market research organizations (154)
minimum 0	

Note: resultant point rankings of 5 alternatives

## Current Practice

Despite a number of reservations it may nevertheless be stated that recently a general awareness has evolved of the importance of research on customer needs. The number of organizations and employees who actually or are reported to be engaged in this activity, is also relatively high.

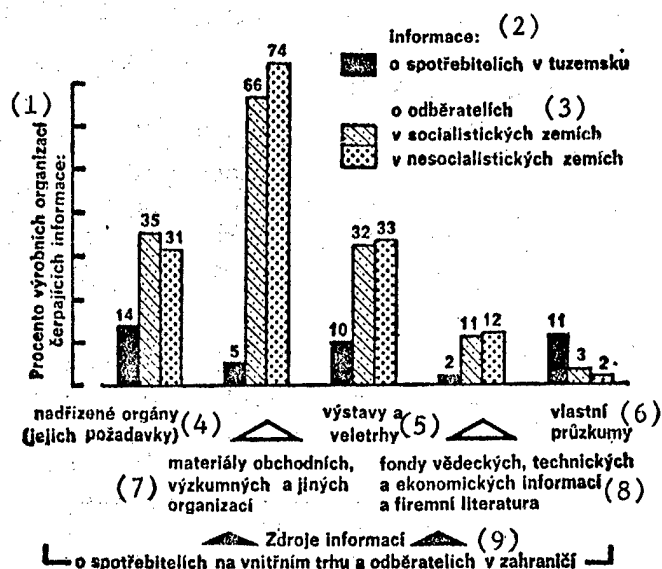
Of the organizations in our sample that are engaged to some extent in marketing 63 percent conduct some sort of domestic market research at least once a year, 17 percent less than once a year, while 20 percent engage in no research at all. Research is conducted most frequently by organizations engaged in domestic trade, the consumer goods industry, and the chemical industry. The largest percentage of organizations that conduct no domestic market research is in the food industry. This makes no sense in view of the problems that exist in supplying the domestic market with food products especially in terms of the product mix, quality and responsiveness. The distilling and canning industries are to some extent an exception to this.

We have found that in most organizations market research is combined with some further, most frequently commercial activity. Often both are parts of the same program. In domestic trade alone 56 percent of the organizations have full time employees for current research and 35 percent have full time employees for long range forecasting. Some engineering organizations are even imitating the chemical and consumer goods industries in their long range forecasting, but they still have a long way to go in terms of the sophistication of the projects. Fully 82 percent of all engineering organizations have no employees engaged in current research concerning domestic requirements, and 86 percent have no one engaged in long term forecasting.

The answers obtained from firms in the chemical industry indicated a systematic, plan oriented approach based on projects assigned by middle management. In the consumer goods industry specific enterprises engage in what is rather a number of smaller programs. For these programs they use either their own sales outlets or those of patron stores, or cooperate with department stores, etc. Their answers clearly indicate an awareness of the necessity of research for eliminating marketing problems. Methodologically, however, specific programs vary in their scope and intensity. In engineering and the electrotechnical industries there are numerous cases where negotiations related to supplier-consumer relations and even mere responses to product offerings are presented as market research.

If domestic market research cannot be considered to be fully satisfactory then the situation in foreign market research is even worse. The vast majority of polled enterprises have no employees who specialize in this activity. Even in foreign trade organizations current research is only a part time job in 45 percent of the organizations and long term forecasting in 25 percent of our sample. There is no full time employee for current market research on foreign customers in 81 percent of the foreign trade organizations, and 73 percent of these organizations have no full time person for long range forecasting.

Graph 3. Sources of Consumer Information



Key:

1. percentage of production organizations drawing on this information
2. information concerning domestic consumers
3. concerning users in socialist countries  
in nonsocialist countries
4. requests of supervisory organs
5. exhibitions and trade fairs
6. in-house research
7. materials from trade, research and other organizations
8. clearing houses for scientific, technical and economic information and enterprise literature
9. sources of information on consumers in the domestic market and foreign users

Production organizations obtain 91 percent of their information concerning domestic consumers from direct customer contact (with domestic trade organizations). Information on foreign customers is also obtained by direct contacts (without the involvement of foreign trade organizations) in 44 percent of the cases for socialist countries and in 37 percent of the cases where nonsocialist countries are concerned. Our questionnaire indicated that the firms in our sample base 36 percent of their domestic marketing on their own projections and 38 percent on their own qualitative opinions concerning market development.

Even though production organizations lack very important information about foreign markets, only 4 percent of them indicated that they were taking any steps to begin foreign market research. Only one enterprise organizes meetings for foreign representatives and service technicians, and this is done only once

every two or three years. The others are content to cooperate with foreign trade organizations, which in practice means abandoning the market research to the foreign trade organizations and not getting involved in it.

#### Potential of Research

On the one hand, as our questionnaire confirmed, a number of production, trade and marketing organizations experience various marketing problems at the same time that they have a shortage of information concerning their customers and markets. On the other hand they conduct market research only rarely and most of the time replace it with management by request within the context of supplier-consumer relations.

Practice frequently blurs the great difference between a subjectively, experientially based opinion and information obtained objectively with the help of precise techniques and methods with a specific degree of probability. This type of activity has its own regulations, specific methods and techniques which qualify it as a bona fide discipline, as opposed to subjective estimates. The fact that the technical development of a product requires the work of a number of qualified employees and necessitates certain costs is doubted by no one today. But one rarely encounters well-documented economic justifications for innovations that includes a verification of the future marketability of a product. Part of the fault here lies with both economic and technical colleges.

Let us take as an example washing machines, market research for which can enable us to derive projections of future useage. The starting point is the current development of consumption, (i.e. the sales of new and the retirement from service of old washing machines) which is not linear and therefore cannot be applied automatically to the future. Data obtained by the Trade Research Institute in Prague yields the development of the presence in households of automatic washing machines, traditional washing machines, and centrifuges only. This data also indicates the age structure of automatic washing machines.

More detailed analysis yields the following characteristics: the age of the households equipped with specific types of washing machines, the character of the place of residence, employment and income groups, the type of housing available to these households, etc. Further research then helps in answering questions concerning the reasons which motivated the purchase of an automatic washing machine, to determine the length of time before an automatic washing machine is replaced, to determine the conditions under which an owner of a traditional machine decides to purchase an automatic unit, and what the attitudes are to specific types of washing machines, their quality, appearance, price, etc.

Information concerning the views and attitudes of consumers often reflect, however, a momentary situation; with their assistance a view can be gained only a short time into the future, for about 1-2 years. To obtain longer range forecasts of sales it is necessary to work with longer time series that capture the past development of sales, deliveries, and numbers in the field and to distill this information into basic developmental trends which may be extrapolated using mathematical and statistical techniques.

## Sources of Findings

The starting point for solving every problem such as estimating the future marketability of a new product or searching for the reasons for poor sales of an existing product, is its precise specification, the so-called breaking down of the problem into simple and precise questions to which research may yield an answer. Underestimating the importance of this stage can result in a time consuming research project that provides unnecessary information.

During stage two the methods and techniques must be chosen that will be used to collect and analyze the necessary information and decisions, and the decision made as to whether the task can be handled with in-house resources or in cooperation with another organization. This decision is based on the equipment available to personnel, their qualifications and labor discipline, the time necessary to solve the problem and, last but not least, the costs necessary to conduct the research.

It is not always necessary, moreover, to collect new information. It is often sufficient, at least in the early stages, to use data which has already been processed for other purposes and which may be available within or outside the enterprise.

It is possible, for instance, to make use of time series concerning the production and sales of goods, concerning sales on domestic and foreign markets, data concerning returned goods, and concerning the development of average sale prices. For consumer goods the important data includes the presence of a given type of good in households, family budgets, the development of incomes and expenditures of the general public, as well as data concerning the development of consumption and prices abroad in given areas. Also necessary are technical data related to a specific product, especially data on previously produced, comparable products both at home and abroad.

Secondary information gathered over several years can serve as the basis not only for the rapid analysis of situations within a given product line, but also for analysis of consumption trends, marketing and sales patterns, and for the processing of solid forecasts. Writing a computer program to utilize trend curves is not a difficult problem today. What is more complicated is the correct and proper interpretation of the results of this analysis.

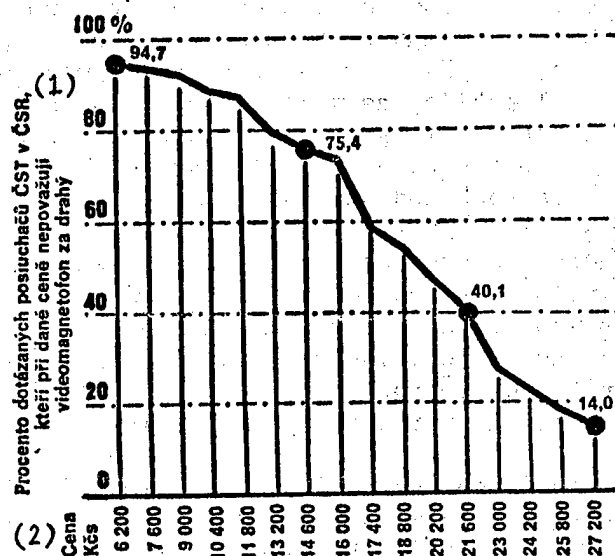
When secondary information is not sufficient to answer problems in the development of new products or sales steps must be taken to obtain primary information. This is usually a more complicated undertaking. The most usual technique is the use of a questionnaire. The practical application of market research often boils down to this alone.

This is actually a relatively inexpensive and simple technique that suits the purpose of short term market research of the type most often conducted at the enterprise level. The simplicity and ease of implementation, however, does hold some danger: if the preparatory steps of this type of research are underestimated or the research is conducted sloppily, or if the information potential of the questionnaire is over-estimated, the use of a questionnaire

can yield inadequate or imprecise results which breed a distrust of research generally. Proper preparations require that attention be paid to the questionnaire, the questions to be asked at an interview, and that the sample of individuals to be questioned be chosen so that the research will yield representative results.

Product testing is an interesting technique. A specific product (sample, prototype, a product from a test series or, in an extreme case, a drawing or photograph) is shown to a selected group of consumers accompanied by a thorough explanation and the detailed questioning of the tested individuals. Usually a small sample of 40-60 people is tested, but because of the nature of the data sought (attitudes, opinions, evaluations as well as purchase intentions in relation to the declared attitudes) and because of the possibilities for applying various statistical techniques to the testing of determined differences, even such small samples can yield reliable results. The key to success is proper methodological and organizational preparation and the precise adherence to methodological approaches to the selection and evaluation of tests. In the Institute of Technical Development and Information in recent years production enterprises have cooperated in the testing of almost all models of electrical appliances for households including consumer electronic appliances; experiences with the results that have been obtained have been very positive.

Graph 4. Interest in a Videorecorder in Relation to Price



Key:

1. percentage of questioned viewers of Czechoslovak Television in the CSR that does not consider listed price for a videorecorder to be expensive
2. price in korunas

Source: CSOPK materials and author analysis

In addition to observing the functional and technical properties of new products independent research can be conducted on the attitudes to the design and price levels of given products. The relation of prices to the functional and esthetic properties of products is becoming more important as a component of purchasing decisions of the general public. This is increasing the importance of pricing research. The so-called price sensitivity test can with great reliability determine, for a newly introduced product, a curve that relates the interest of potential buyers to various prices for the product. In 1984 the Institute for Technical Development and Information, in cooperation with Czechoslovak Television, conducted price tests for the Ministry of the Electrotechnical Industry (within the context of work on the development of a line of consumer electronic items) for color television receivers and videorecorders that had been introduced on our market.

International product comparisons can also yield interesting information concerning the appropriateness of established pricing relationships for the technical and functional parameters of new products. The Korter method has been chosen from among a number of comparison techniques recently for a number of products. This technique is based on the determination of a correlation between technical and functional parameters and the prices that have been obtained for comparable groups of our own and foreign products. More detailed information about this technique was contained in an article in HOSPODARSKE NOVINY No 18/1985.

Another relatively widely used technique recently--especially for long range forecasting where insufficiently long time series of past developments are available--is the delf questionnaire which is a professional technique, and is based on the evaluation and modification of forecast information obtained from a collective of experts.

The answers of the respondents to the CSOPK questionnaire also contained numerous cases of hand wringing. Certain organizations, it seems, have conducted a number of valuable and methodologically sound research projects the results of which have remained for the most part unnoticed in some desk drawer. Some employees, it turns out, have an interesting attitude to market research. If its results do not bear out their own opinions they do not trust the research. To the extent that the research confirms their views they consider it to be unnecessary. Obstacles to the use of market research are, however, often more serious.

The main area in which respondents indicated that research utilization could be improved was in its role in central management, its incorporation into the planning system and the conduct of macroeconomic research on national economic requirements. It should be admitted that the objectives outlined in this area by the Principles for Conducting Market Research Related to Planned National Economic Management, which was published by the State Planning Commission on 31 March 1976, have not been attained to a significant extent at all management levels. In some sectors they have been forgotten and some guidelines related to market research have even been rescinded.



Our respondents pointed mainly to economic barriers to the broader application of market research. They pleaded, for instance, for an increase in enterprise and individual incentives for the effective sale of goods, and for changes in plan indicators that would increase the need for knowledge concerning customer needs and requirements.

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CSO: 2400/41

ECONOMY

CZECHOSLOVAKIA

#### DAILY DEALS WITH CURRENCY VIOLATIONS

AU071006 [Editorial Report] Prague RUDE PRAVO in Czech on 3 March 1986 carries on page 3 a 1,500-word Karel Walter report on a roundtable discussion, entitled "Talk With the Staff Members of the Federal Criminal Central; How to Crack Down on 'Moneychangers'." The participants in the discussion on the "antisocial activities of 'moneychangers'," called in the [derogatory] vernacular "vekslaci," are Major Pavel Rydlo, doctor of socialist sciences and deputy chief of the Federal Criminal Central (FKU) attached to the Federal Administration of Public Security; and Major Pavel Zeman and Major Zdenek Lesak, chiefs of FKU divisions and doctors of law.

Asked whether the "so-called 'veksl,' which means speculation with foreign mediums of payment and TUZEX vouchers" for shops selling goods in short supply for hard currency, is really such a problem, Rydlo points out: "The simpler equation 'foreign currency purchased equals exchanges for TUZEX vouchers equals sales and profit' has become, particularly in the last few years, far more complicated and sophisticated, but also more profitable. The foreign currency bought by speculators from foreigners is illegally carried out back over the border and such goods as automobiles, videorecorders, and so forth are then sent to our country in return as 'presents.' And these goods are then sold for considerable profit."

Zeman then lists the law violations involved in these transactions: purchase of foreign currency from foreigners, which illegally provides them with Czechoslovak currency; nonfulfillment of the duty to offer foreign currency to the bank; illegal export, false data in importing "presents"--all of which, Zeman says, "violates the state's foreign currency monopoly, the monopoly of foreign trade, and the functioning of domestic trade." This, he says, constitutes the felonies of "threat to foreign currency transactions, violation of regulations on the goods trade in contacts with abroad, speculation, and corresponding misdemeanors."

The organization of "trade between speculators and foreigners" is then described by Lesak: It is carried out in "international hotels, places attractive to tourists, spas, parking places, and taxis. Some speculators work in collusion with the drivers of foreign buses and with foreign guides, arranged in advance." Lesak adds that one can see signs of a "certain organization," that the "vekslaci" mostly work in groups, "have their protectors," and have lines to taxi drivers and the hotel staff.

Zeman underscores that the "vekslaci" are next to the worst types of criminals and can resort to acts of violence and acts against property; they are often employed "in otherwise honest and needed jobs, which either enable them to move around uncontrolled or in which they come into contact with foreigners. They form a colorful palette: stokers, janitors, nightwatchmen, technicians of musical groups (but not of the most prominent ones), restaurant personnel, receptionists, gasoline station attendants, taxi drivers, and so forth."

Rydlo adds to this that recently in Bratislava a middleman who travelled all over the CSSR and whose speculations ran into millions was apprehended, and that "a group of seven people now stand accused in Prague: an emigre from the CSSR; a janitor in the restaurants-and-cafeterias enterprise and a janitor in the city district housing economic enterprise unit; an automobile painter; a mechanic; a taxi driver; and a maintenance worker. We are showing that the main culprit's profit from speculation was more than Kcs 700,000."

Zeman points out that speculators can achieve a profit of several hundred percent by making use of some people's wish to show-off with foreign-made goods. Lesak mentions that, frequently, people are sold junk in such under-hand transactions, and that recently several shell-game operators were sentenced in court for seducing people to lose large sums.

Asked about the counterfeit banknotes recently discovered in the CSSR, Lesak states: "All counterfeits found during the last 10 years are of foreign origin. They distributors try to turn them into money precisely through the 'vekslaci.' But our system of [bad] currency detection is so good that these attempts are usually very quickly discovered. Last spring, for instance, we apprehended a gang which tried to sell 30 counterfeit hundred dollar banknotes." He mentions that a woman from Litomerice lost Kcs 30,000 in this way, and that a man bought 11 counterfeit \$100 banknotes before Christmas. According to Rydlo, the security corps was able to uncover about 1,000 cases of foreign currency offenses, cases of speculation, or smuggling, annually; and offenders have been punished, particularly during the last 2 years, in all regions of the country.

The next topic deals with the citizens' view that it is not uncommon to see youngsters and women selling TUZEX vouchers on the street. In this context Zeman says: "I do not agree with the view that we are passively looking on; however, as I have already indicated, the so-called street 'veksl' is merely the tip of the iceberg. In these instances the responsible staff of financial institutions, of shops selling for TUZEX vouchers, of hotels, taxi services, and so forth, should also be more interested in what is happening around them. Surely they are the ones responsible for the proper, legal operation of their workplaces--they should not be indifferent to what is happening. The security corps is not renouncing its responsibility in this way; but it must concentrate primarily on more serious law violations. Some people erroneously believe that everything can be resolved by large-scale actions, by raids. Naturally we are not waiving this, either, but for us the most important issue is their effectiveness."

Lesak adds to this: "Far more important than reprisals is the elimination of causes and conditions leading to this kind of antisocial behavior."

Rydlo then points out that one such cause is the wish of some people to "take one or two more foreign currency banknotes with them on their vacation," or to be able to "show-off with TUZEX goods." Zeman wonders at the indifference toward frequent absences from work and the way young people spend their leisure time, and says: "We must act against specific individuals for whom moneychanging has become a means of enrichment without work, in the ultimate consequences; we must report them to national committees, to their workplace, to their school, and--self-evidently--to the security corps." Public order inspection officials and also public security officers should more frequently inspect the places where moneychanging occurs, he says.

In conclusion, Rydlo points out that, after the compulsory registration of foreign currency imported to the CSSR by foreigners was discontinued in 1966, it has become impossible to check whether a person is taking out more foreign currency than brought into the CSSR. The illegal "presents" to CSSR citizens in 1981-84 included several thousand passenger cars, videorecorders, computers, musical goods, and so forth, he says; the "speculators made a good profit from them, and their 'commercial' partners abroad--mostly emigres--also got their share. I think that by suitably interlinking the corresponding legal, power, control, moral, and other instruments, we should be able to ward off these illegal activities far more efficiently than to date."

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CSO: 2400/234

ECONOMY

CZECHOSLOVAKIA

'TRAGIC SHORTAGE' OF MODERN MEASURING DEVICES

AU102228 [Editorial Report] Prague RUDE PRAVO in Czech on 3 March 1986 on page 5 carries a 1,100-word article by Boris Valnicek, doctor of natural sciences, entitled "Electronics Is More Than Just Computers." The article deals with the "almost tragic" shortage of electronic measuring devices in Czechoslovakia.

Valnicek opens the article by deploring the excessive emphasis placed by the electronics industry on the production of computers. He says that although the "usual upswing" in the production of computer technology is a positive fact, the 70 [seventy] different types of computers Czechoslovakia produces are far too many. He suggests that some of the facilities involved in computer production be used to develop and produce networks of terminals, which are indispensable for the large-scale utilization of computers, and to produce modern measuring technology. According to Valnicek, "for a long time now, this has been the greatest weakness of our electronics industry."

Valnicek goes on to say that "standard modern measuring technology"--digital multimeters, service oscilloscopes coupled with a multimeter, or digital counters--such as are used daily in every electronics laboratory, "are virtually nonexistent in our country." Whereas Western electronics companies have been producing such equipment for years, only the first attempts at such production are being made in Czechoslovakia. Yet these attempts are restricted to small producers, within the framework of the ancillary production of united agricultural cooperatives or SVAZARM [Union for Cooperation With the Army] organizations. Valnicek reveals that "at a time when in many countries digital multimeters are a matter of routine even in the amateur workshops, our development laboratories have to be equipped with analog type multimeters, the quality of which does not even come up to that of the Avomet apparatus, which the Metra Blansko enterprise used to produce 30 years ago."

Valnicek continues: "As far as more complicated measuring technology is concerned, the situation is almost tragic: A digital storage oscilloscope simply does not exist. Some 3 years ago the Research Institute of Communications Technology developed a logic analyzer and promised its introduction to production--there is no trace of it. Because modern electronics cannot develop without such devices--they are simply indispensable for space research or any computer technology, for example--hard currency must be spent to import them from nonsocialist countries. Research work cannot be

postponed until these devices are available from the "Research Service" agency, which rents out such equipment, nor is it possible to go and carry out the measurements elsewhere. The equipment must be available in the laboratory because at certain times they are needed every day.

"Here is the root of the problem. This lag in electronics has become a limiting factor in a number of areas, especially in budget-funded organizations, that is, at workplaces involved in basic research and at institutions of higher learning. Thanks to export deliveries, industrial organizations are able to help themselves to a certain extent. However, this does not solve the problem of top-level research institutions, which are in the area of budget-funded organizations. It is from this viewpoint, that we must critically assess the state of our industry in the area of measuring technology. It seems to me that the setting up of a production research enterprise in the 9th 5-Year Plan, an idea that has been aired by the technical director of the Tesla Brno economic production unit, is not the only possible solution. It might be more efficient to start the production of modern technology at once, by purchasing suitable licenses."

Valnicek concludes the article by saying: "At any rate, there exists enough food for thought in this area for the Ministry of Electrical Engineering Industry and for economic production unit enterprises. It is necessary to realize that without modern measuring technology there will be neither good consumer electronics nor good computers, to say nothing of the education of new specialists."

/9599

CSO: 2400/234

ECONOMY

CZECHOSLOVAKIA

BRIEFS

ROBOT DEVELOPMENT--Bratislava, 19 Mar (CTK)--Czechoslovakia will have saved 10,000 workers and brought down production costs by 1,600 million crowns in 1990 by putting into operation some 7,000 robots in 3,758 automatic lines over the next 5 years. Moreover, Czechoslovakia will export robots and automatic lines worth 1,350 million crowns in the same period. Responsible for the research and development of robotization in Czechoslovakia is the metal industry research institute in Presov, East Slovakia, which cooperates with institutes in Bulgaria, the GDR, Poland, Hungary, Romania, and especially the Soviet Union through the international scientific-technological association ROBOT. [Text] [Prague CTK in English 1008 GMT 19 Mar 86 LD] /9599

FEDERAL ENERGY COMMISSION--The federal government energy commission met in Prague today. It assessed the results in supplying the national economy and the population with fuels and power in the past period and assessed the prospects in regard to deliveries for the second quarter of this year. It noted that the tasks in supplies of liquid and gaseous fuels, as well as electric power, are being fulfilled. The commission also assessed the proposals for increasing international cooperation in the development of equipment using nontraditional fuel sources. It also discussed measures in the electronics industry which aim to safeguard production of high quality condensers for the needs of semiconductor technology. [Text] [Prague Domestic Service in Czech and Slovak 1100 GMT 20 Mar 86] /9599

ECONOMIC ACCORD WITH SPAIN--Prague, 21 Mar (CTK)--A long-term agreement on economic and industrial cooperation between Czechoslovakia and Spain was signed here today. The 5-year agreement gives a new shape to bilateral economic relations following Spain's entry into the European Economic Community and replaces the 1977 agreement on trade and economic and industrial cooperation. The new agreement envisages greater activity of Czechoslovak and Spanish enterprises and joint ventures at third markets. Czechoslovak exports to Spain include textile and printing machinery, machine tools, tractors, cars, electric motors, chemical products, furniture, textiles, glass, and food products while traditional commodities imported from Spain are citrus fruits and food products. [Text] [Prague CTK in English 1330 GMT 21 Mar 86 LD] /9599

CSO: 2400/234

ECONOMY

GERMAN DEMOCRATIC REPUBLIC

## ECONOMIC ASPECTS OF BIOTECHNOLOGY APPLICATION EVALUATED

Leipzig LEBENSMITTELINDUSTRIE in German Vol 33 No 1 Jan/Feb 1986 pp 5-9

[Article by Prof Dr sc Siegfried Heinz and Dozent Dr sc Heidemarie-Lehne, Humboldt University in Berlin, Department of Nutrition and Food Technology (Director of the Department: Prof Dr sc G. Westphal)]

[Text] Summary

Biotechnology can only take its place as key technology if processes are realized which are to be valued economically better than traditional ones. In the article, the authors describe how economy can give specific directions for biotechnological research and can value processes extensively.

The Intensification of our national economy demands the development of technologies and their transfer into production methods, especially those which promise high efficiency with great reliability, whose cost-benefit ratio is more favorable than with traditional comparable methods. In achieving this objective, a key role is to be ascribed to biotechnology in the present and foreseeable developmental period.

The definitions and characteristics of the term biotechnology are manifold. Thus Ringpfeil describes biotechnology very appropriately as "... the application of biological processes in industrial production and industrially organized services" /19/. The following premises are common to nearly all published opinions, discussions, and definitions:

Biotechnology is based on the utilization of biological, microbiological, and biochemical action principles.

These action principles become biotechnology by being transferred into an industrial or large scale, that is a technical (major technical) engineering conversion of these often genetically-based biological-biochemical processes is undertaken.

In correspondence with the manifold nature of the processes, biotechnology demands interdisciplinary work, especially among all the sciences that are concerned with materials production and conversion, starting with basic research up to the transfer of scientific knowledge into production.



In recognition of these premises, one must agree with Mueke /16/ who specifies the birth of biotechnology to be the development of the brewing industry, the first use of biological relationships on an industrial scale. The stages formulated by Jung /14/ are also ordered within this time frame (Figure 1).

A series of authors place the birth of biotechnology in prehistoric times. For thousands of years, people have used biological relationships unconsciously in order to bake bread, ferment wine, brew beer or distill ethanol. These processes form a foundation for the modern foodstuff industry, which currently, in terms of its scope, is still the most significant branch of biotechnology. But they become technology only by being transferred to an industrial scale.

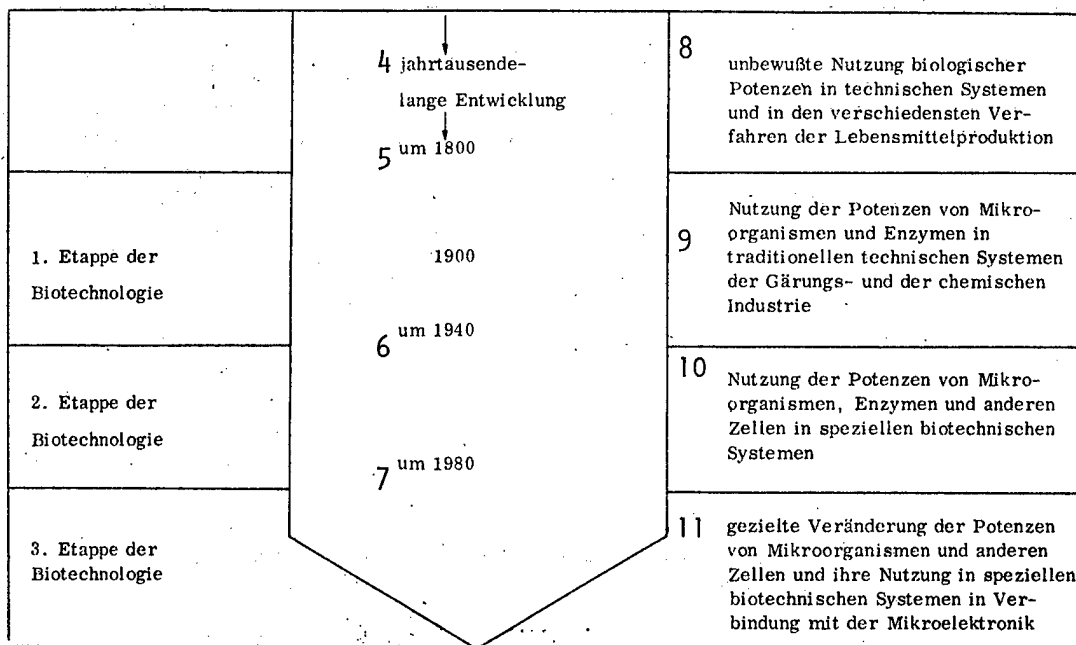


Figure 1. The development of biotechnology and its characteristics (according to /14/)

- 1 first stage of biotechnology
- 2 second stage of biotechnology
- 3 third stage of biotechnology
- 4 thousands of years of development
- 5 about 1800
- 6 about 1940
- 7 about 1980
- 8 unconscious use of biological potentialities in technical systems and in the most various processes of foodstuff production
- 9 the use of the potentialities of microorganisms and enzymes in traditional

- technical systems of the fermentation and chemical industries
- 10 the use of the potentialities of microorganisms, enzymes, and other cells in special biotechnological systems
  - 11 targeted modification of the potentialities of microorganisms and other cells and their use in special biotechnical systems in combination with microelectronics

Starting from the definition of biotechnology, one can also answer the question concerning its foundation. Naturally, these are the biosciences, especially those which are concerned with the material starting basis. Their biotechnological processing requires the opening up of technical and economic disciplines.

The large-scale engineering implementation of biological processes is based on process engineering, demands modern control and regulation mechanisms, and the application of process computer technology for controlling and optimizing the processes. And it presupposes the economic establishment and valuation of these processes. The economic evaluation of biotechnological processes must take place before they are transferred into a large scale so that an increase of production efficiency will be assured by their application. Only that biotechnological process is fruitful for the future whose overall efficiency is superior in a comparable economic evaluation of the initial situation. For this evaluation, all directly quantifiable factors without restriction must be made into an evaluation criterion, and not directly quantifiable factors must be drawn upon as decision aids.

The opportunities and directions of biotechnology are manifold and various. From this multiplicity, the actual implication possibilities must be selected, especially under economic aspects, since in principle the starting point must be that the solutions which are created are economically determined. This connection is still insufficiently considered in the national and international literature on biotechnology. Although the literature on biotechnology is extraordinarily rich, economic aspects are still only treated by few authors and then only by way of assumptions. Especially the given relationship between modern biotechnological processes and the implementation of the economic strategy of the SED provides a challenge to permeate economically the scientific and engineering processes.

In connection with the planning and large-scale design of biotechnological processes, the following main directions must be considered in terms of economics:

1. Determination of economically based necessities, possibilities, and directions of the development of the biotechnological industry and the biotechnological penetration of industrial branches.

Starting from questions such as

increasing the yield of raw materials, especially from regenerative raw material sources, simultaneously their suitable and thrifty use, including specific measures for the reprocessing and reuse of waste products;

optimization of the distribution of production locations both on the basis of the energy economy and the environment;

determination of production criteria for the optimal dimensioning of production capacities;

designing the production processes by utilizing the advanced state of science and technology as well as the organization of productive powers and other economically definable decision premises.

The complex penetration of these and other problems also entails new orientations for basic economic research. These are to be found in a profound economic analysis of production processes, the establishment of objective evaluation criteria for quantifiable and not-directly quantifiable factors of the production processes, as well as in the area of computer-supported design and monitoring of the business reproduction process and increasingly also of the economic reproduction process. Modern biotechnology must be planned and formed from the very beginning with consideration of such premises.

## 2. Economic analysis and evaluation of accomplished or possible biotechnological processes with consideration of the relationships cited under 1.

The economic analysis of existing processes makes it possible to uncover weak points and thus provides important pointers for further research and process design. Possible or planned processes should build thereon and ought to be evaluated in comparison to similarly situated actualized processes or according to established methods (among others /12/) in the form of variants as decision aids. Here, one starts from the necessary complexity of the economic evaluation by including all quantifiable and essential not-directly quantifiable factors. With strict consideration of the objective and of the reliability of the information, it is also true for economic evaluation that all the necessary but not all the possible criteria must be drawn upon. A decision concerning this is to be derived from the above-mentioned economic main directions and must always be subsumed in economic relevance.

This type of complex economic evaluation of biotechnological processes must be a component of every research task. It is a presupposition for large-scale implementation.

The economists in particular must answer the following questions:

How large is the product-specific overall expenditure, e.g. in comparison with conventionally used products?

In which process steps do weak points occur (comparatively excessive costs, high losses, etc.)?

Are deviations from the program based on the process, the raw material, or on subjective factors?

What overall evaluation of the new process is obtained if one includes not-directly quantifiable factors?

Is the introduction economically well founded at the time or at what time?

The following explanations should give reference points and should clarify features of biotechnological processes that require economic consideration.

The calculation of the product-specific expenditure can be made according to the following formula:

$a_G$	total expenditure for the production of a product unit
$k_{prop}$	proportional unit costs
$k_{d^{up}}$	less than proportional unit costs
$k_{p^{up}}$	degression coefficient
$k_{p^{up}}$	more than proportional unit costs
$n$	progression coefficient
$k_{fix}$	number of product units produced per year <sup>1</sup>
$k_{ab}$	fixed costs per year
$e_{kop}$	specific costs for the removal of waste products (cost/product unit of the main product)
$I$	specific yields for by-products (yield per product unit of the main product)
$NK$	one-time (investment) expenditure
	utility coefficient (reciprocal of the back-flow time)

<sup>1</sup> In place of the year, another time period can also be chosen, e.g. a month; the formula will then change in the last term as follows:

$$\frac{....+(1/12) NK}{n}$$

The one-time expenditure is necessarily included in the calculation and this is done through the normalized utility coefficient. For the national economy, this is set at 0.5, but it cannot be thus accepted for a precise process evaluation. Taking into account the revision of the normative utility claim of basic means, the utility coefficient must be determined in adaptation to real conditions. Thus, for biogas systems in agriculture, the coefficient will be 0.045. This corresponds to an average normative use time of 22.5 years.

The capacity-cost problem is especially important for biotechnological processes. In general, it is true for every process that the unit cost of the product are all the lower the more the available capacity is utilized (under the presupposition that the over-proportional costs do not grow faster than the product-specific fixed costs which fall as a result of larger distribution).

However, in the processes of the foodstuff and nutrition business, the ratio of fixed to variable costs is about 10:90, and generally it is shifted still further towards the variable costs. This is due to the high proportion of basic material costs (after the agrarian price reform in various branches greater than 90 percent).

With biotechnological processes, another ratio should generally prevail. Two special features must be taken into account here:

The raw materials for biotechnological processes often are by-products or waste products whose price is low, even with the addition of transport costs (an important advantage of biotechnological processes!);

the equipment for biotechnological processes embodies a high value which will rise still further with the industrial price reform effective January 1, 1986.

The result of this is that the capacity utilization obtains a much higher weight for economic efficiency than was the case for conventional processes of foodstuff or feed production. The ratio of fixed to variable costs (and here the proportional costs) shifts towards the fixed costs, until the above-mentioned ratio has been reversed.

Neglecting the over-proportional and under-proportional costs as well as the proportional overall expenditure, this relationship will be clarified by way of a model.

As a basis we assume for a conventional process an average capacity workload of 70 percent, and a ratio of proportional to fixed costs of 90:10, but with a biological process a ratio of 20:80. Shut-down and waiting times as well as inadequate capacity utilization are incomparably more serious economically for a biotechnological process than with a process whose expenditure is determined largely by the raw material costs. These relationships are directly quantifiable and thus must be taken into account in a precalculation of the economic utility.

Besides considering this quantifiable total expenditure per product unit, non-quantifiable factors, or factors which cannot be expressed in monetary units, must be included in the evaluation and in the comparison of the processes. Such a feature is product quality (KQ-value).

The advantages and the future of biotechnological processes frequently reside not only in a direct production and efficiency increase but in an economically not quantifiable area. Among these belong the following criteria, among others:

- improvement of working and living conditions,
- avoidance of environmental pollution,
- the opening up of regenerable energy sources,
- the increased refinement of raw materials and
- better consideration of nutritional-physiological requirements.

The selection and conjunction of these heterogeneous variables, which differ in their quantifiability, is a further task of process evaluation.

In a first step, the various criteria that are regarded as relevant for the process are associated with the overall objective (= increase of efficiency) and are classified as much as possible.

The object criteria are weighted, for one thing with reference to reaching the partial objective, and for another thing with reference to reaching the overall objective.

The disadvantage of this first step consists in the fact that subjective influences regarding object criteria evaluation can be eliminated only by a large number of expert estimates and statistical processing. According to our opinion and experience, the total expenditure per product unit as a partial objective should enter the total evaluation at least with a weight of 0.7.

In a second step, the variants are entered into a matrix and then are compared with one another.

To avoid another subjective influence in the distribution of the points, we propose to use a point scale of 0...10, which has proven itself.

With all criteria that can be dealt with in value units, the points are assigned corresponding to the exact percentage ratio of the variants to one another divided by 10 (e.g. variant with the highest expenditure/product unit = 100 percent/10 = 10 points).

Comparison variant: 96.5 percent = 9.65 points.

With all variables that cannot be dealt with in value units, but which are directly quantifiable, a conversion is made to the point scale (e.g. KQ value of 0.86 = 8.6 points or achieved points in the quality evaluation

$16.7 = 16.7/2 = 8.35$  points).

All non-quantifiable factors are organized to such an extent that a simple quality evaluation, i.e. an answer to basic questions with yes or no, is possible. For this purpose, auxiliary tables are set up.

The points which are determined directly through calculation or through auxiliary tables, are entered into the point matrix. Multiplied by the weight of the criterion ( $g_{zj}$ ), they yield the utility value, which is entered into the utility-value matrix.

The different signs are to be noted. If the total expenditure, as the most important variable, is entered as a positive quantity, such criteria as an increase of the nutritional-physiological value or a quality increase must receive a negative sign. The variant with the lowest number of points is then the preferred variant. The inverse is possible just as well.

In terms of this evaluation scheme, the first statement is the response to the question concerning the variant that is most favorable in terms of expenditures. To this is added a second statement, about a question concerning the best variant, taking into account all relationships and factors.

As a last step of economic process evaluation, the reference points for the perfectability of the process must be determined. A basic condition for this is their organization into elements. Up to now, only the inputs and outputs have been evaluated, the process itself has been considered as a black box.

We deem it sensible to organize the process into process steps for a more profound analysis, following the technological flow chart. Now the product-specific expenditures are determined for each process step. For this purpose, one determines the labor requirement, the capacity, the losses, and other variables. Thus over and under capacities (bottlenecks) and comparatively unjustified high expenditures can be uncovered. These weak points form the reference point for the further upgrading of the process by technicians, biochemists, and engineers.

### 3. Application of Information Science in Biotechnological Research and Practice

By applying statistical experimental plans and their computerized processing in the stage of biotechnological basic research, the number of experiments can be reduced and the experimental program can be optimized.

The creation of foundations for computer-supported production and management provide the presuppositions for a future rational biotechnological industry.

Modern process engineering, such as is achieved in biotechnology, includes computer-supported process control and optimization. It is the task of information science, building on the automated material transformation processes and on theoretical values for process parameters which have been worked out in basic research (e.g. pressure, temperature, pH value, CSB load, content of TS and OTS), to work out computer programs which combine process optimization with optimal information output for management. This information makes possible an exact estimate of material expenditures and of the results of production, a comparison between production collectives (shift collectives), and especially the solution of strategic problems (raw materials basis, waste product strategy, product maintenance, and development of new products).

If one considers the time factor, it also becomes clear that an informative form of complex process evaluation can be found only with the utilization of information-theoretical principles in computer-supported programs. Accordingly, the scientific disciplines of biotechnology and information science combine to form two pillars of future process design in the nutrition and foodstuff industry. But they build on proven basic disciplines and on their own further development. Economic evaluation provides an important bracket for this, to achieve the required production growth with economically favorable expenditures.

### 4. Conclusions

The main economic directions we have presented clearly show that modern biotechnology in the final analysis can be designed only in conjunction with and with strict consideration of economic criteria. The reference points are given in manifold fashion, e.g. by the possible high growth rates in cell multiplication, the exploitation of previously unused protein sources, or the unburdening of the environment while simultaneously exploiting urgently needed energy sources (biogas production from animal wastes or from wastes of the food industry and the communal area).

Figure 2.

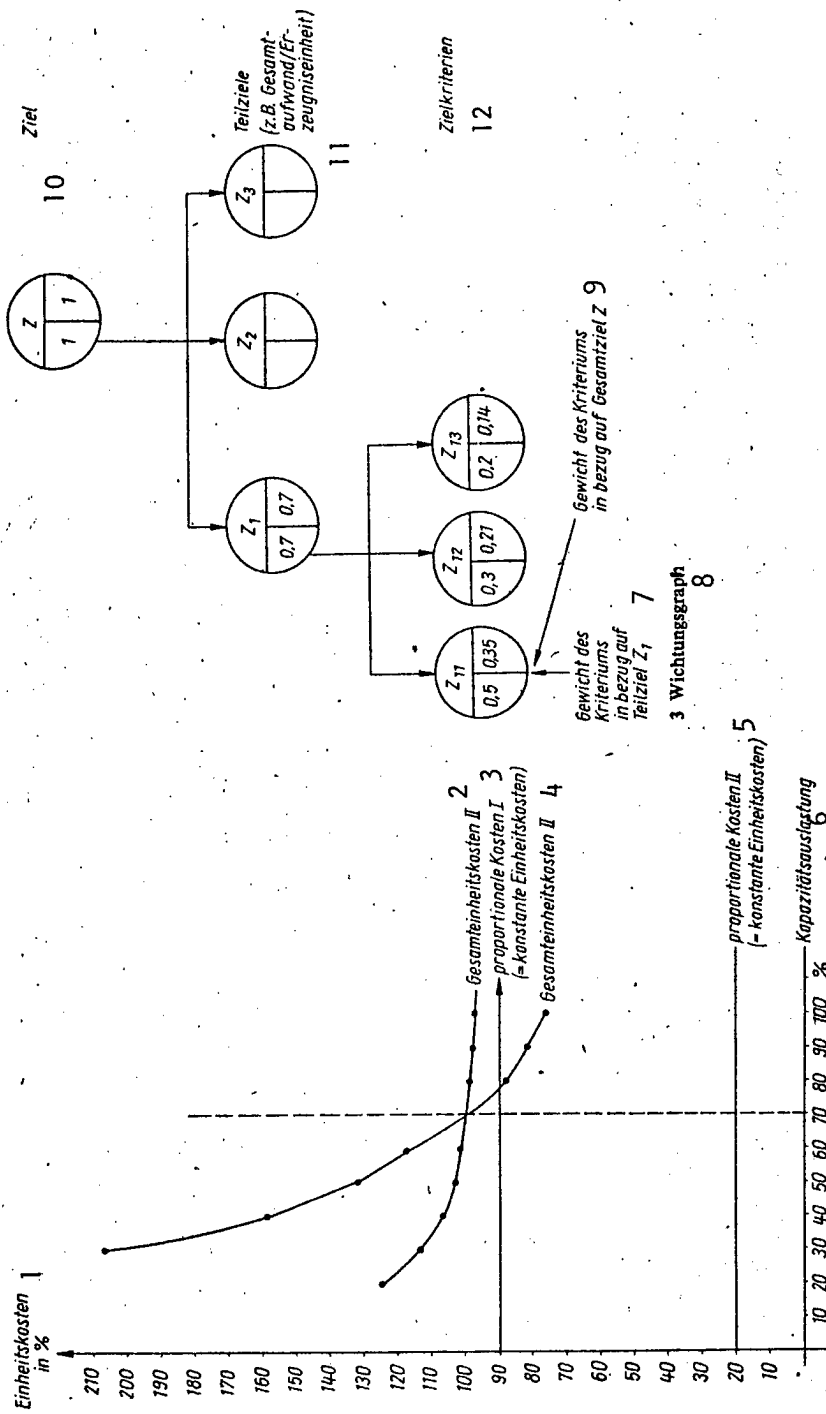




Figure 2. Model of unit-cost change with different capacity workload

- 1 unit cost in percent
- 2 total unit cost II
- 3 proportional cost I (= constant unit cost)
- 4 total unit cost II
- 5 proportional cost II (= constant unit cost)
- 6 capacity workload
- 7 weight of the criterion relative to component objective  $Z_1$
- 8 Figure 3 Weighting graph
- 9 weight of the criterion with reference to the total objective Z
- 10 objective
- 11 component objectives (e.g. total expenditure per product unit)
- 12 objective criteria

1 Zielkriterium/Teilziel	Punktematrix 2			Nutzwertmatrix 3			Anmerkung 4
	$V_1$	$V_2$	$V_n$	$V_1$	$V_2$	$V_n$	
$Z_{11}$	10	8,4	0,35	3,5	2,94		Punkte · Gewicht = Nutzwert 5
$Z_{12}$			0,21				
$Z_{13}$			0,14				
$Z_1$			0,7				
$Z_{12}$							
$Z_{13}$							
$Z_{ma}$							
	$\Sigma$						

Table 1 Point and utility-value matrix

- 1 objective criteria/partial objective
- 2 point matrix
- 3 utility value matrix
- 4 remark
- 5 points x weight = utility value

	$V_1$	$V_2$	$V_3$
1 Frage 1	1	1	0
2 Frage 2	1	0	0
3 Frage 3	0	1	0
4 Frage 4	1	0	1
$\frac{V_i}{n}$	$\frac{3}{4} = 0,75$	$\frac{2}{4} = 0,5$	$\frac{1}{4} = 0,25$
Punkte $\frac{V_i}{n} \cdot 10$	7,5	5,0	2,5

Table 2. Example of an auxiliary table

1	question 1
2	question 2
3	question 3
4	question 4
5	points

For the foodstuff industry, it is to be expected that biotechnology will be able to manage the increase in supply tasks without significant growth in the area of materials utilization.

The utilization of the biocatalytic capabilities of cells and enzymes in connection with metabolism facilitates higher material yields in many branches (for instance, fermentation, baking, dairy industry). Considering that the proportion of material costs within the total costs is as much as 95 percent, this is a key question.

Other economic effects in the supply efficiency are to be expected from increases in quality - including in a nutritional-physiological perspective, from the stabilization of durability, as well as from improved appearance of the products. These are effects which affect business directly, but which also are important from the perspective of nutritional economics.

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ECONOMY

GERMAN DEMOCRATIC REPUBLIC

## SINTERED PLASTIC MATERIAL REPLACES CONSTRUCTION STEEL

East Berlin BAUZEITUNG in German Vol 40 No 2 Feb 86 pp 60-62

[Article by Dipl Eng Bernt Krueger, Dr Eng Edgar Dehler, Construction Academy of the GDR, Institute for Building Materials at Weimar]

[Excerpts] Multi-layer tiles have already been used for some time in industrial and residential construction in the GDR, in addition to single-layer tiles made of lightweight aggregate concrete or gas-silicate concrete. They have been used as heat-insulating exterior walls.

The installation of such prefabricated elements has emphasized certain problems which did not occur with conventional building designs. On the one hand this holds for the proper formation and secure sealing of the joints between the exterior wall elements and, on the other hand, for the joining of the elements among one another. The element junctions are generally guaranteed by appropriate reinforcement layout and concrete casting. Corrosion protection of the bonding agent is here permanently secured, if the covering is adequate and if the reinforcement is dimensioned, so that no crack-prone deformations can result at the junction points.

Quite different circumstances prevail in the element cross-section of the heavy triple-layer external wall elements of the residential building series 70 (WBS 70). As a result of stresses and of the expectations for the structure, the state building supervision of the GDR, in its directive 50/76 /1/ has prescribed to all manufacturers of triple-layer exterior-wall elements, the quality requirements and the actual layer structure.

Accordingly, the weather-protection layer consists of 60 mm thick concrete of grade BK 20 with an inserted reinforcement mat made of St B-IV; the support layer consists of 150 mm thick concrete of grade BK 20 or BK 25 with inserted reinforcement made of St A-I and St A-II. These two concrete layers are separated by the heat insulating layer (50 mm polystyrol or 50 mm mineral wool). Various bonding elements are used to hold the two concrete layers together. These bonding elements must dissipate the forces which attack the weather-protection layer and the inherent load of the support layer. These forces may be:

forces caused by transport and assembly  
wind pressure and wind suction

length changes or bucklings of the weather-protection layer as a consequence of temperature changes.

In the above-mentioned directive, two types of bonding agents are distinguished, specifically support anchors and anchoring needles.

Because of the element design, the anchorings are exposed not only to the mechanical stresses but especially also to airborne contaminations that are damaging to building materials, for instance sulfur dioxide, carbon dioxide, and sometimes also concrete additives and chemicals in insulating materials, especially chlorides and sulfates.

In this connection, corrosion protection is of special significance for the bonding elements.

The directive 50/76 prescribes austenitic chromium-nickel-steels X8 Cr Ni Ti 18.11 or X8 Cr Ni Ti 18.10 with diameter 8 mm for the support anchors, and steel type X5 Cr Ni Mo 18.11 or X5 Cr Ni 18.10 with diameter 4 mm or 3 mm for the manufacture of anchoring needles.

A highly alkaline environment with a pH greater than 12 guarantees, in pollutant-free, that is mainly chloride and sulfate-free, cement concretes, reliable protection of the steel reinforcement as well as of the bonding elements within the weather-protection layer and the support layer. Naturally, it is presupposed that the steel reinforcement and bonding means are protected against the access of moisture and oxygen. This means that the weather-protection layer must be manufactured free of cracks, and the concrete covering must correspond to directives. The requirement to adhere to the concrete quality is prescribed in compulsory fashion by the TGL 37817 /2/.

Every violation of this directive includes the possibility that contact corrosion can occur in the weather-protection layer as a result of an electrical voltage drop when using the above-mentioned different metals or alloys.

In the heat-insulating layer of polystyrol or mineral wool, moisture resulting from water vapor that has diffused from condensation, as well as oxygen and pollutant gases in the air have free access. The bonding elements in this area are especially at risk as a result of corrosion. Precisely for these reasons, the high grade austenitic chromium nickel steels are used as bonding agents. For the GDR economy, special steel is a high-cost material, especially because its alloying components are imported. In the middle of the 70's, the Institute for Construction Materials performed experiments to replace the previously used bonding elements by a concrete steel coated with a duplex corrosion protection system. Accordingly, polyethylene powder is applied on a tinned substrate by whirl sintering. These active corrosion-protection coatings act cathodically. For instance, zinc coatings on steel are quite effective in providing corrosion protection. When moisture attacks corrosively, zinc goes into solution anodically as a cation. As long as the steel is still covered by metallic zinc, it will not rust. The passive zinc corrosion products offer additional protection, such as oxide and hydroxide compounds, which have lower solubility than the iron corrosion products.

Another extension of the protection time is achieved by coating with zinc. The protective coating of polyethylene prevents or reduces especially the dangerous formation of zinc sulfate. The corrosion products of zinc furthermore occupy only about one quarter of the volume of the zinc itself. In comparison to this, the volume of iron rust is more than twice as great as that of iron. As a result, there is no rust migration with zinc as there is with iron.

Furthermore, in this case, rust pressure on the plastic layer is significantly lower than in the case of construction steel without a zinc coating.

The so-called "synergistic principle" is the basis for this duplex system, i.e. the duration of the protective action of the component combination is greater than the sum of the durations of the protective action of the individual components (tinning and coating). This synergistic effect is explained by the fact that the coating protects the zinc layer until the coating film has been degraded entirely.

There are various methods for tinning; most frequently fire tinning and electroplating are used. The two GDR standards TGL 18 733/01 corrosion protection, fire-metallic protection coatings, technical requirements, tests, and TGL 18 733/03 corrosion protection, surface treatment, classification and determination of roughness, prescribe the quality of the tinning.

As a substitute material for bonding elements made of Cr-Ni steel, the following steels are used:

anchoring needles with 200 mm length made of concrete steel St B-IV with a diameter of 4 mm

support anchors of concrete steel St A-I with a cut length of about 1200 mm and a diameter of 8 mm.

The plastic coating of already tinned bonding elements is applied by whirl sintering, a method which was introduced into actual practice about 30 years ago.

By whirl sintering is generally understood a surface protection process, in which a coating melts on by immersing heated work pieces into a whirled plastic powder.

If there is only a single sintering process, uniform, pore-free, smooth, and seamless protective coatings with layer thicknesses between 0.2 and 1.5 mm can be fabricated. The plastic powder material is processed without adding any solvents, so that environmental pollution or health injury to the operating personnel are excluded. The process is extremely economical, since practically no material losses occur. The pretreatment of the workpiece being coated is very important, and the sintered-on layer must be tested (Figure 4). The plastic coating is applied to the tinned substrate by whirl sintering and its optimal layer thickness is about 300  $\mu\text{m}$ . It proved stable under the following load conditions:

alternating immersion process according to TGL 18 754/02 /3/ with three percent NaCl solution,

aerosol test according to TGL 18 754/03 /3/ with sodium bisulfate (this test approaches most closely to natural use conditions),

behavior relative to dry heat,

behavior relative to boiling water,

stability relative to alkalis and acids.

The use of anchoring needles is determined by their adhesion to the concrete of the support layer.

With a penetration depth of at least 100 mm, and depending on the concrete quality, they are required to take up a tensile force of 1 to 2 KN.

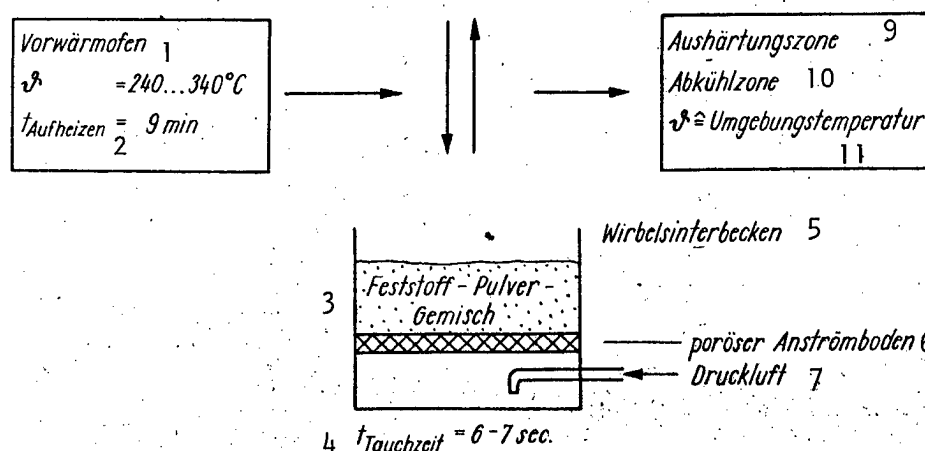


Figure 4 Process sketch for whirl sintering

- |                        |                        |
|------------------------|------------------------|
| 1 preheating furnace   | 9 hardening zone       |
| 2 heatup               | 10 cooling zone        |
| 3 solid powder mixture | 11 ambient temperature |
| 4 immersion time       |                        |
| 5 whirl sintering bath |                        |
| 6 porous inflow bottom |                        |
| 7 compressed air       |                        |



The adhesion strength between anchoring needles of concrete steel St B-IV, feuzn 60, pe 300, and concrete is about 90 Pa. Some needles were placed in tubes of concrete, and were exposed to about 6000 bending alternations at a slow speed, varying amplitude, at a test temperature of 40° C and a relative humidity of 95 percent. The coatings remained intact without visually detectable damage.

Long-term studies extending over five years with whirl-sintered anchoring needles were concluded with the result that macroscopically and microscopically no damage of the PE layer and of the zinc layer could be observed.

With the substitution of high-grade special steel by tinned and plastic-coated concrete steels, the construction business of the GDR has available an approved method (approval number 178/82), which effects a reduction of original cost by about 60 percent and which especially represents an equally valuable variant to special steel.

At the present time, the Institute for Construction Materials is working out process-engineering and material solutions whose objective is to optimize the process with respect to energy saving and with respect to reducing the use of coating materials.

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CS0: 2300/215

ECONOMY

POLAND

BRIEFS

AIR TRANSPORT AGREEMENT WITH PRC--Beijing, March 20--Poland's Civil Aviation General Authority and the General Administration of Civil Aviation of China (CAAC) signed an air transport agreement here today, signed on behalf of the Polish and Chinese Governments by Director-General Jozef Sobieraj and CAAC's Director Hu Yizhou. The Polish delegation was received by China's Vice Premier Li Peng. In the course of talks preceding the signing of the document, the sides discussed all legal, financial, and commercial aspects of cooperation between the two carriers--the Polish airlines LDT and the Chinese airlines CAAC. Both sides emphasized their willingness to open two-way air links on the shortest route and as quick as possible. [By Jerzy Bajer]  
[Text] [Warsaw PAP in English 2259 GMT 20 Mar 86] /9365

CSO: 2020/107

POLITICS

INTERNATIONAL AFFAIRS

APRIL CSCE MEETING PREVIEWED

LD282231 Warsaw PAP in English 2002 GMT 28 Mar 86

[Article by Zbigniew Boniecki]

[Text] Warsaw, March 28--A meeting of experts from the Conference for Security and Cooperation in Europe (CSCE) member states concerning contacts between people, institutions, and organizations is due to open in April in Bern. The meeting will be an important stage of preparations for the Vienna meeting, which should bring a substantial contribution to the sanitation of the political climate and restore the detente in Europe and the world, into the adoption of new, serious steps aimed at lowering the level of military confrontation between European states.

Poland invariably comes out in favor of unbroken continuation and deepening of CSCE processes, and anything that consolidates the elements of security in politics, military affairs, economy, and human rights.

There still remains much to be done in this last field. According to a communique issued by the meeting of Warsaw Treaty member states' foreign ministers, held in Warsaw nearly two weeks ago, the socialist states will consistently come out for full guarantee, with respect to the sovereignty of states, of human rights in all fields, and especially of the right to live in conditions of peace and freedom.

Western states made repeated attempts to use this aspect of the CSCE Final Act as a weapon against the socialist states. It is known, however, that the freedom to travel for personal or professional reasons, the improvement of tourist conditions, sports contacts, and hence the development of various contacts between persons and organizations, or cultural cooperation is being severely impaired by Western measures. It is evidenced by thousands of refusals to issue visas to Polish citizens who plan to visit major capitalist states. There is much to be complained about from the CSCE point of view as far as the issue of treatment of foreign citizens by Western authorities is concerned. Some of these states also imposed limits on the number of foreign language lecturers exchanged.

Before the Bern meeting, the last one of the series (following last year's Ottawa meeting on human rights and the Budapest cultural forum), hopes should

be expressed that a spirit of restraint and constructive cooperation will dominate the spring forum. It does not suit the interest of any nation in the world to freeze the CSCE spirit and process. Bern might contribute to extending cooperation in Europe by a new dimension--the dimension of humanitarian cooperation.

/9365

CSO: 2020/108

## SIGNIFICANCE OF APRIL 1956 PLENUM ANALYZED

Sofia NARODNA ARMIYA in Bulgarian 19 Feb 86 pp 1-2

[Article by Colonel General Mitko Mitkov, chief of the Main Political Administration of the People's Army: "Dashing Forward to the Future"]

[Text] Three decades have passed since that month of April when the BCP Central Committee held its plenum, which has remained engraved forever in the memory of the Bulgarian people. In terms of the daring of its resolutions, scale of influence on all areas of social life and the revolutionary role they played in the all-round development of the party and the country, the April 1956 BCP Central Committee Plenum is an event of permanent historical value.

Its remarkable contribution is that it rejected the cult of personality, alien to Marxism-Leninism, restored the Leninist principles and norms of social and party life and laid the beginning of a new stage in building socialism. Today, 30 years later, we are fully justified in saying that the decisions of the April Plenum created the necessary conditions, prerequisites and guarantees for the implementation of profound quantitative and qualitative changes in the overall life of our society. Above all, the role of the Central Committee as the collective leader of the party and the country was firmly enhanced; a deep change was made in the style and methods of party and state leadership. The party promptly directed its forces to resolving the new crucial problems of our development. Its leading role was enhanced and its ties with the working people strengthened. Our heroic and industrious people rallied even more closely around the Communist Party and their constructive energy, enthusiasm and creative inspiration were released.

The principal merit of the April 1956 Central Committee Plenum was the formulation of the party's April line. This is a creative line, a line which expresses the interests of the people and is based on their forces and possibilities; it is a line of construction and of steady social renovation.

The April line is the direct continuation and fruitful development and enrichment of the most valuable traditions and features of the party dating from the Blagoev and Dimitrov periods. At the same time, it is a Leninist line. It represents the creative interpretation and development of the tremendous positive experience of the CPSU and the other Marxist-Leninist parties and the entire international communist workers movement. That is why its development and application is a valuable contribution made by our party to the treasury of Marxism-Leninism.

The most accurate characterization of the April line is found in the resolution of the 12th BCP Congress on the occasion of the 25th anniversary of the April 1956 BCP Central Committee Plenum. It states the following: "The April line of the BCP is Marxism-Leninism in action under the specific conditions of our country, the live unity and interaction between creatively developing theory of scientific socialism and the specific sociohistorical practice of the working class and the broad popular masses in the struggle for building and developing socialism in our country."

The line drafted at the April Plenum was enriched and improved with every subsequent plenum and congress and in the daily activities of the party and the state. In the past decades it established itself as the Leninist April general line of the Bulgarian Communist Party. As pointed out by Comrade Todor Zhivkov, our first party and state leader, "the April line is a strategy for leadership and action. It earmarks the high road to building mature socialism and a gradual transition to communism in Bulgaria."

The April line is the result of the collective mind and will of the entire party and the constructive activities of the Bulgarian people. However, it is an unquestionable truth that its elaboration and practical implementation in building socialism in the past 30 years has been directly related to the comprehensive political, theoretical and organizational activities of Comrade Todor Zhivkov, the BCP Central Committee general secretary and chairman of the NRB [Bulgarian People's Republic] State Council. His political creativity and innovativeness enriched the theory and practice of mature socialism, making him the architect and creator of the Leninist party line and the universally acknowledged political leader of the BCP and Bulgarian people, noted Marxist-Leninist and outstanding and respected leader in the international communist movement.

The April path which we have covered convincingly proves the strength and vitality of the April party line which, displaying Leninist wisdom and maturity and a creative approach and insight into the future, is leading the country to new peaks of social progress.

The main historical results of the implementation of the party's April line is the current socioeconomic, political and spiritual aspect of the homeland. April Bulgaria is today a country with a powerful economy, blossoming culture, science and education, a country enjoying high international prestige. It is an active member of CEMA and the Warsaw Pact.

An important gain of the April strategy was making Bulgaria a developed industrial state and establishing and maintaining high and stable rates of socioeconomic growth. We are proud of the fact that previously poor and backward bourgeois Bulgaria is today exporting electric cars and hoists, metal cutting machines and computer equipment and developing contemporary sectors bearers of technical progress, such as machine building, the chemical industry, electronics, instrument manufacturing and the nuclear power industry.

The economic balance of the past 30 years is a joyful and optimistic one. Since 1956 capital assets in the national economy have increased about ten-

fold and basic production assets by a factor of almost 14. Industry has become a leading national economic sector. In 30 years its output has increased by a factor of 14. Our socialist agriculture is successfully developing as well. Within the same period of time agricultural output increased by a factor of 2.5.

The dimensions of the April social policy are impressive. Essentially this policy is one of steadily satisfying the growing material and spiritual needs of the people and the systematic implementation of the principle "Everything in the Name of Man and Everything for the Good of Man." Concern for the people and their well-being found its concentrated manifestation in the party's December 1972 program of upgrading the living standard. Despite the difficulties triggered by poor weather conditions in recent years, this program is being successfully implemented. This is confirmed by the following figures: between 1956 and 1985 the country's national income increased eight-fold in comparable prices. On the basis of this universally synthesizing economic indicator, Bulgaria is in one of the leading positions in the world. Per capita consumption has increased by a factor of 4.5 and real income by a factor of more than 4.4. Social consumption funds are developing particularly dynamically. From 48 leva in 1956 they will reach 915 leva per capita in 1986, i.e., they will have increased by a factor of 19.

The development of a streamlined structure of the socialist political system in our country is a major accomplishment of the April party line. In the past 30 years the leading role of the BCP has reached a qualitatively new level. It has developed as a party of creative Marxism-Leninism, a revolutionizing and transforming force and a tried and wise political leader of the Bulgarian people in the struggle for building socialism and communism.

At the same time, the sociopolitical functions of the socialist state as the power body of the working class, allied with all detachments of the working people, were enriched and gained new content. Our Bulgarian contribution to the political theory and practice of mature socialism is the sociostate and state-social principle in the management and development of a number of social areas and processes.

As a result of the systematic implementation of the April party line, its militant alliance with the Bulgarian National Agrarian Union has strengthened; the role of the Fatherland Front, the Bulgarian trade unions, the Dimitrov Komsomol and the other mass sociopolitical organizations was enhanced.

Socialist democracy reached a new level after the April Plenum. Real conditions and guarantees were created for expanding the participation of the broad popular masses in the administration of social activities and their conversion into the subject of social management. The role of the primary units was enhanced and the working person became the main content of the improvement of our political system. Thanks to the scientific April party policy in the realm of social relations, the ideological, sociopolitical and national unity of the entire society became stronger and healthier. Today the Bulgarian nation is a single, cohesive and united socialist nation.

The April party line played a particularly fruitful role in the development of the spiritual area and in social activities. The April cultural policy became the unshakable ideological and political foundation on which the unity of the Bulgarian socialist intelligentsia is building and strengthening systematically and on a principled basis. The organic combination of the ideals and principles of socialism with the ever fuller expansion of the creative forces and capabilities of the people and their involvement with the durable values of art and culture was a major gain of the April line in the spiritual area. As a result of this policy our country achieved remarkable successes in science, artistic culture and public education. The transforming power of the Leninist April general line of the BCP has had an exceptionally beneficial influence on strengthening the defense capabilities of the homeland. Thanks to this, in the period since the April plenum and, particularly, after the October 1958 BCP Central Plenum, the Bulgarian People's army developed as a reliable armed force of the country and a reliable defender of the socialist gains and peaceful toil of the people. Very well armed and trained, with an unshakable moral spirit, it is steadily enhancing its combat readiness in accordance with the requirements of the party and the steadily worsening international situation, caused by imperialism, making its contribution to the joint armed forces of the Warsaw Pact.

The main conclusion drawn at the 12th BCP Congress was that the April line is the right line, confirmed by life and by the party's historical experience. What are the main sources of its transforming power? What are the prime sources of its vitality? What is the secret of its fruitful durability?

Above all, the fact that the April line is the true line, scientifically substantiated and consistent with the basic needs of our social development, is of determining significance. One of the sources of the vital strength of the April line is the party's ability and skill creatively to apply the theory of Marxism-Leninism and the general laws of building socialism in accordance with the specific features of Bulgarian reality and to seek and find scientific solutions of tremendous practical significance. The party's comprehensive theoretical and applied efforts during the April stage found their impressive manifestation in the BCP program for building a developed socialist society in our country, which was adopted at the 10th Party Congress.

The party's theoretical work has been particularly fruitful after the 12th Congress. Under Comrade Todor Zhivkov's leadership, applying an April spirit and innovativeness, concepts, approaches and views were developed by the party, which are of strategic significance in our further development.

The April line is strong and vital because it expresses the interests of the people. It offers extensive opportunities for the practical manifestation of the initiative and constructive power of the masses, of millions of people. It is a line of and for the people but also a line which is implemented through and together with the people.

The April line is an innovative revolutionary theory and practice, a line of combining the achievements of the scientific and technical revolution with the



advantages of the socialist social system. Based on the latest achievements of science and technology, it daringly formulated new guidelines which are blazing paths in the country's socioeconomic development for decades into the future. The resolutions of the February 1985 and January 1986 BCP Central Committee plenums are imbued with the Leninist April spirit. They provided a scientific program of action for the political, state, economic and social bodies and organizations, for the systematic utilization of the achievements of scientific and technical progress.

The April line armed the party with a new historical experience. It awakened new forces and capabilities within it. At the same time, it relies on the rich international experience in building socialism in the fraternal socialist countries and, above all, draws richly on the inexhaustible experience of the CPSU and the Soviet state. The priceless gain of the deeply international Leninist line, in terms of spirit and nature, is the enhancement of relations between the NRB and the Soviet Union, between the BCP and the CPSU. These are relations of fraternal cooperation and comprehensive rapprochement and a true example of socialist internationalism in action.

The crystallly pure Bulgarian-Soviet friendship is the great motive force of our socialist upsurge. It is our deeply felt personal matter, our destiny and a prerequisite for new victories in our common struggle for communism.

The strength and vitality of the April line are also found in the ability of our party to have a self-critical attitude toward its work and its ability to lead the entire people, the entire society in an irreconcilable struggle against weaknesses and shortcomings. The socialist society cannot renovate itself without self-criticism. As Comrade Todor Zhivkov emphasizes, "We can advance only by getting rid of what weighs on us, that which hinders our way." The new broad tasks to be implemented require the decisive restructuring of the style and methods of work and management, high-level organization, order and discipline and an uncompromising struggle for uprooting all negative phenomena in our life.

A distinguishing feature of the April line is its combativeness, its irreconcilable attitude toward bourgeois and revisionist ideology and its permanent struggle for the purity of Marxism-Leninism.

The April party line is a line of decisive and firm actions in support of peace, for the conversion of the Balkans into a zone free from nuclear and chemical weapons and for establishing neighborly relations and cooperation among Balkan countries. Our party, our entire people welcome and fully support the new Soviet program for rescuing mankind from the nuclear threat, contained in the declaration of Comrade Mikhail Gorbachev, CPSU Central Committee general secretary, made at the beginning of this year. An earth free of weapons and threats during the third millennium of mankind and peace and cooperation among nations is our ideal.

However, the world continues to live under the ghost of thermonuclear war. The U.S. imperialists are continuing to draw plans for the militarization of space, in the vain hope of establishing military strategic superiority over socialism. All of this demands of us always to keep our "powder dry," not to

slacken our vigilance even for a moment and steadily to strengthen the country's defense and to increase our contribution to enhancing the combat defensive power of the Warsaw Pact armed forces.

Such are some of the sources of the strength and vitality of the Leninist April general party line.

The 13th BCP Congress will open in less than two months, on 2 April 1986. It will provide a new revolutionary impetus to the development of society. On that same day, 30 years ago, the creative April Plenum began its proceedings. This coincidence is a symbol of the historical continuity between these two events, of the readiness of the party to continue to develop and enrich the April line as a decisive prerequisite for the socialist upsurge of the homeland. Life confirmed clearly and impressively the unquestionable truth that the line earmarked by the April Plenum has become firmly rooted in the life of the people and it is organically related to Bulgaria's present and future. That is why we can say with full justification that in terms of its strength and vitality it is aspiring forward, to the future.

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POLITICS

CZECHOSLOVAKIA

CSSR DEPLORES U.S. 'MALICIOUS' ANTI-UN CAMPAIGN

AU181343 Prague RUDE PRAVO in Czech 11 Mar 86 p 7

[Commentary by Dusan Rovensky in the "Notes" column: "Campaign Against the United Nations Organization"]

[Text] The U.S. Department of State has submitted the demand that the number of diplomats working in the permanent representations of the USSR and the Ukrainian and Belorussian SSRS attached to the United Nations be cut down by 40 percent as of 1 April 1988. This contradicts the UN Charter and the commitments undertaken by the United States as the host country. It is a step which impairs American-Soviet relations in a particularly important phase--at a time when it is most necessary to back up with deeds the declarations about the need of international detente, contained inter alia also in the concluding document of the Geneva meeting.

This is no isolated step. In reality we have here the next stage of attack against the entire UN system and against its charter on the part of the United States.

A few years ago, a strategy of the fight against the United Nations organization was worked out in Washington's Heritage Foundation, a rightist research institute dealing with political issues. The Heritage Foundation was founded by Adolph Coors, a Colorado millionaire and one of President Reagan's closest friends. A substantial part of the \$100-million budget of this organization is being generously supplied by large U.S. capital.

The conclusions at which the Heritage Foundation has arrived were received with great attention in the White House. In keeping with the conclusions, one started escalating attacks against the United Nations. Even the members of the Reagan cabinet--former U.S. Ambassador to the United Nations Kirkpatrick; Alexander Haig; and others--took part in the insidious attacks against this significant international organization. Likewise, President Reagan's statements, which are hostile to the United Nations, are also known.

In April 1984, the Heritage Foundation published the book "The World Without the UNO." It is an instruction on how to make impossible the activities of the United Nations, of UNESCO, and of other international organizations which evade American influence. We can also find in the book that: If the United Nations will not work according to our interests, then it is necessary to leave it.

According to this script, divisive actions were initiated against UNESCO. On 1 September 1985, the U.S. Government introduced a curtailment of movement for those UN Secretariat staff members who are citizens of Afghanistan, Iran, Cuba, Libya, the USSR, and Vietnam. This January, Washington restricted the movements of diplomats from other countries accredited to the United Nations, and of the UN Secretariat staff who are citizens of the CSSR, the People's Republic of Bulgaria, the Polish People's Republic, and the GDR. Now, and there is no doubt that this is not its last step, it has come out with the unprecedented demand that the number of Soviet diplomats be cut down.

The malicious U.S. campaign against the United Nations impairs the international atmosphere, and damages and restricts the United Nations organization which has accomplished such significant work for peace and for international cooperation.

This is a "cold war" campaign and it must be most emphatically condemned.

[Editorial note: Bratislava PRAVDA in Slovak on 11 March carries on page 7 a 500-word Julius P. Loerincz commentary in the "Foreign-Political Note" column, entitled "Provocation Against Detente." Pointing out that, since 10 March, the world knows that the U.S. Government does not worry about international law, or even about its own commitments as the host country of the United Nations, Loerincz says that the U.S. authorities are treating the diplomats of many UN states as "serfs of the White House." He then cites the U.S. press on the latest U.S. demands for a 40-percent cut in the USSR's UN staff and states: "The voicing of this demand transcends the authority of the U.S. Government; and, with regard to the United Nations, it is interference in the sovereignty of the organization's member-countries and has a clearly confrontational character." After noting the justified "resolute condemnation and high degree of indignation" produced by it among "realistic political circles," Loerincz speaks about recent U.S. restrictions on the movements of many, also CSSR, diplomats in New York and elsewhere in the United States, and about the "scope for a terrorist campaign against the representatives of socialist and developing countries" ignored by U.S. authorities for many years. He says: "It is thus not surprising that the question again crops up: Is New York, and U.S. territory, at all the correct place for the UN seat?"

"The current, unequivocally anti-Soviet provocation was obviously born in those U.S. circles which are not pleased by the detente in Soviet-American relations and in the overall international situation, the possibility of which began to emerge after last year's meeting between Mikhail Gorbachev and Ronald Reagan. It is typical that, in American Government circles, Secretary of Defense Caspar Weinberger was the one to back most resolutely the American Government's step; although he has nothing in common with American diplomacy, he belongs among the leading representatives of the military-industrial complex in the United States. This gentlemen cannot but know," concludes Loerincz, "that this step can adversely influence East-West relations and, as the LONDON TIMES wrote, that it is a demand which threatens the American-Soviet summit planned for this year."]

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CSO: 2400/235

POLITICS

CZECHOSLOVAKIA

CSSR SPOKESMAN ADDRESSES DISARMAMENT CONFERENCE

LD201716 Prague Domestic Service in Czech 1530 GMT 20 Mar 86

[Text] Switzerland: A speech was given today at the Geneva Disarmament Conference by Ambassador Milos Vejvoda, head of the CSSR delegation, on banning nuclear weapons tests. He stated that this is a problem whose solution is growing increasingly urgent, because a number of other disarmament issues are connected with it. The decision of the Soviet Union, expressed in the letter by Mikhail Gorbachev to representatives of six countries, that the Soviet Union will not test any nuclear weapons even after the moratorium on all nuclear explosions has expired--as long as the United States does not carry out any tests either--was universally well received. A ban on nuclear weapons tests would contribute to reducing these weapons.

On the issue of verification, Ambassador Milos Vejvoda stated that the socialist community countries have demonstrated on many occasions their willingness to accept the kind of verification measures which would ensure the necessary confidence. The Soviet Union has repeatedly stressed that matters of verification, including international on-site inspection, do not pose any problems as far as the Soviet Union is concerned.

It is regrettable, noted Milos Vejvoda, that through the fault of the Western delegations--and especially the U.S. delegation--the conference has still not been able to set up a committee for detailed negotiations on banning tests.

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POLITICS

CZECHOSLOVAKIA

BRAZIL CONGRESS DELEGATION RECEIVED BY ALOIS INDRA

AU122104 Prague RUDE PRAVO in Czech 18 Feb 86 pp 1, 2

[CTK report: "Sufficient Points of Contact Between the CSSR and Brazil"]

[Text] Prague--The delegation of Brazil's Congress, led by its chairman Jose Fragelli, on Monday [17 February] paid tribute to the memory of the Unknown Soldier. To the sounds of the funeral march and with military honors, the delegation laid a wreath at his tomb in the National Monument in Zizkov Hill in Prague.

The act of reverence in which the delegation was accompanied by Dalibor Hanes, CSSR Federal Assembly deputy chairman and chairman of the Chamber of Nations, concluded with the state anthems of the two countries.

The guests then inspected the National Monument and signed the guest book.

The Brazilian deputies were then received by Alois Indra, CSSR Federal Assembly chairman. The reception was attended by CSSR Federal Assembly deputy chairmen Jan Marko, Vaclav David, Dalibor Hanes, and Michal Zakovic; and by other representatives of our supreme body of representatives.

Manuel Antonio de Pimentel Brandao, ambassador of the Federal Republic of Brazil in the CSSR, was also present.

At the beginning of the friendly talk, Alois Indra briefed the guests on the results achieved in building socialism in Czechoslovakia during the past 40 years, and on the development of working initiative prior to the approaching 17th CPCZ Congress and the elections to legislative bodies. He also pointed out the main current tasks, above all the need to intensify the national economy, accelerate the utilization of scientific and technical knowledge in production practice, and enhance the citizens' participation in management and in the administration of society.

He then expounded the CSSR's principled stands on certain international political problems, at the same time stressing that our country is striving to consolidate peace and to resolve controversial issues by negotiations. He underscored the Soviet Union's principled peace policy and the significance of the comprehensive proposals submitted by Mikhail Gorbachev, the realization of

which would rid our planet of nuclear arms in the immediate future. The resources made available in this way could be used to resolve mankind's dragged-out global problems. He further mentioned the situation in Europe, in Central America, and in other parts of the world.

The CSSR Federal Assembly chairman called the Czechoslovak-Brazilian relations traditionally constructive and friendly, relations with predominant economic cooperation. As shown by the recent contacts on ministerial level, as well as by the negotiations of the mutual economic commission, this cooperation can be developed further and more intensely. In conclusion, Alois Indra expressed the conviction that the delegation's visit to our country will contribute toward further strengthening contacts between Brazil and Czechoslovakia in all spheres.

Dalibor Hanes, chairman of the Chamber of Nations, expounded on the status and other tasks of the Federal Assembly to the Brazil deputies.

Jose Fragelli, chairman of Brazil's Congress, expressed thanks for the cordial reception accorded to the delegation's members in Czechoslovakia; and then spoke about the situation in his country where, after many years, a civilian government has taken over power. He also spoke about the preparations for elections to the new parliament, which should also work out a new constitution. He stated that Brazil now stands on the threshold of deep socio-political transformations; it is actively promoting the consolidation of peace, and supporting the nations' right to self-determination and the principle of resolving all conflicts via negotiations.

Even though we can have different opinions, he said, at the same time there exist sufficient points of contact between us, on the basis of which we can develop efficient, mutually advantageous cooperation. Good prerequisites exist for deepening it further, particularly in the economic sphere. Like our visit to Czechoslovakia, such cooperation significantly contributes toward mutual understanding and the strengthening of trust.

Other Brazilian senators also spoke in the discussion, dealing with the economic, financial, and other problems of their country. They also spoke against the U.S. plans for militarizing space, against meddling in the internal affairs of the Central American states, and against armed actions against Nicaragua. In this connection they supported the initiative of the Contadora countries.

In conclusion, the guests inspected the premises of the Federal Assembly and signed the guest book.

In the afternoon the Brazilian delegation was received by Josef Kempny, chairman of the Czech National Council.

In their talk--attended by deputy chairmen of the Czech National Council, Hmarie Jarosova, Zbynek Zalman, and Cestmir Adam--Josef Kempny stated that, despite differing social systems and the size of our countries, a bilateral

willingness exists to develop political, economic, trade, and cultural contacts in the interests of the people of Czechoslovakia and of Brazil, as well as in the interests of a lasting peace. He then briefed the guests on the principles of the state's federal organization, on the position of the Czech National Council in our political system, and on its structure and tasks. He concentrated on the principles of the legislative, control, and initiatory activities of the Czech National Council, and on the preparation of plenary sessions and the committee agenda. In this he stressed the deputies' activities in their electorates, and the organization of group and individual polls.

Jose Fragelli, head of the Brazilian delegation, appraised the successes achieved by our country in building socialism and stated that a lot of our knowledge and experience could be used expediently in the Federal Republic of Brazil. This applies, for instance, to resolving the relationship of local and all-social interests in the activities of lower legislative bodies--a grave problem in Brazil. He underscored that both our countries can contribute to averting the threat of a nuclear war and to ensuring peace; and in this connection he assessed the new Soviet peace proposals positively.

The representatives of the Czech National Council then replied to the numerous questions of the Brazilian senators.

The same day Alois Indra gave a festive dinner in Prague in honor of the Brazilian delegation, led by Jose Fragelli.

It was attended by deputy chairmen of the CSSR Federal Assembly Jan Marko, Vaclav Davis, Dalibor Hanes, and Michal Zakovic; by deputy chairmen of the chambers of parliament Alois Hula and Vladimir Vedra; by Karol Laco, CSSR deputy premier; by Bohuslav Chnoupek, CSSR minister of foreign affairs; by Tomas Travnicek, deputy chairman of the CSSR National Front Central Committee; by Marie Jarosova, deputy chairman of the Czech National Council; and by other representatives of our political and public life.

Ambassador Manuel Antonio de Pimentel Brandao was also present.

The dinner was held in a friendly atmosphere.

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CSO: 2400/235



POLITICS

CZECHOSLOVAKIA

RADIO, TELEVISION WORLD CONFERENCE ENDS

AU122131 Bratislava PRAVDA in Slovak 24 Feb 86 p 2

[CTK report: "The Conference of Radio and Television Unions Closed;  
International Cooperation in Broadcasts"]

[Text] Prague--The Fifth World Conference of International Radio and Television Unions which closed yesterday [23 February] in Prague was devoted to mutual international cooperation in the exchange of television and radio programs. The conference was attended by more than 170 representatives of nine international unions, which rally almost all radio and television stations in the world.

The organizer of this year's significant meeting of radio and television experts, which was held for the first time in the capital of a socialist country, was the OIRT (International Radio and Television Organization), which is based in Prague, together with Czechoslovak Television and Czechoslovak Radio.

From 18-23 February the participants in the Prague conference deliberated in four working commissions. As Achim Becker, OIRT Executive Council chairman, stated at yesterday's concluding press conference--at the beginning of which he thanked the CSSR government and the Prague citizens for their hospitable reception--the deliberations of experts from all over the world took place in an atmosphere of mutual understanding and cooperation.

The chairmen and reporters of the individual commissions then acquainted the journalists with the final agreements and recommendations for resolving the individual issues.

The radio commission dealt, inter alia, with the commercialization of sports events and with the constant increase in charges for broadcasting rights. The representatives of all nine international unions stressed their disapproval at the need to pay for broadcasting sports relays by radio; they agreed for a uniform course on this issue. One of the other steps in the dialogue between radio and television stations and the organizers of sports competitions will be a joint letter of participants in the Prague conference to the International Olympic Committee chairman, in which he will be asked to help in resolving broadcasting rights.

Recordings of popular and folklore music from the individual countries, which all participating organizations will be mutually exchanging at least once a year, will also contribute to international culture exchange.

Problems connected with sports broadcasts were also discussed by members of the television commission, which primarily concentrated its attention on expanding the every day exchange of topical news reports. The education and expert training of television and radio staff in the developing countries was jointly discussed.

Other working discussions concerned legislative developments in the sphere of authors' rights; the protection of television organizations and of their broadcasts; digital relays and recordings of pictures; satellite transmissions; and other legal and technical problems.

A CTK reporter asked Gennadij Codr, OIRT secretary general, for a final appraisal of the Fifth World Conference of International Radio and Television Unions which was yesterday concluded in Prague.

Television and radio today are influencing not only public opinion, they are also responsible for establishing a favorable atmosphere for international cooperation. That is why cooperation between the radio and television unions, which rally the companies from all over the world, is both necessary and essential, he stated, among other things.

"The usefulness of conferences, which are held every 3 years and which are the foundation for further cooperation, lies primarily in the fact that the representatives of television and radio companies from practically all over the world can meet and jointly seek spheres in which cooperation is possible. Our conference, which has just ended, was the fifth in succession; but it was the first held in a socialist country. We have endeavored to create the most favorable atmosphere for its deliberations.

"Most delegates have come to Czechoslovakia for the first time; and for a number of them this was their very first visit to a socialist country. They came here with totally distorted notions about socialism; and what they saw here in Prague, the everyday reality of socialist Czechoslovakia, has affected many of them very strongly. The good atmosphere has also influenced the very course taken by the conference deliberations."

CTK: Will the conclusions of the conference be specifically reflected in OIRT broadcasts?

Codr: The OIRT is one of the unions with the largest share in the international exchange of programs. And the conclusions of the conference are sure to be reflected in the work of its member organizations. In the first place, this will happen in the sphere of news reports. So far we have had a daily exchange with Eurovision, but we are also interested in expanding this exchange to other parts of the world. In the shortest time possible we would

like to begin, at least experimentally, a daily television exchange of news reports with other unions.

We will already begin this exchange on an experimental basis with the ASBU union (Arab States Broadcasting Union) [expansion of acronym published in English] on 1 March.

Cooperation will also become closer in the sphere of sports broadcasts. Together with most unions, we will conduct negotiations, for instance, with FIFA (International Football Association) on conditions for buying broadcasting rights for further world championships after Mexico, that means for Rome in 1990, and so forth. By following a common course with regard to FIFA we want to achieve acceptable financial conditions, because FIFA's demands and those of other international federations and organizers of big international sports competitions are truly untenable, and exorbitantly high."

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CSO: 2400/235

POLITICS

POLAND

#### GRASSROOTS VIEW OF PZPR PROGRAM

AU202113 Warsaw ZYCIE PARTII in Polish 12 Mar 86 p 15

[Interview with Janusz Garbacz, party lecturer in Ostrow Wielkopolski, by Leonarda Tykocka: "Discussing the PZPR Draft Program Uncompromising Attitudes Vis-a-Vis Distortions"--date and place not given]

[Excerpts] [Tykocka] What kind of party meetings do you attend to discuss the PZPR draft program?

[Garbacz] So far I have attended eight meetings of the primary party organizations. One of them was attended by state administrative employees and the rest by workers of large industrial enterprises such as the rolling stock repair plant, the general construction enterprise in Ostrow, and so on. The first meeting I attended was organized for secretaries of plant committees and primary party organizations.

[Tykocka] You have been a lecturer of the PZPR voivodship committee for the past 25 years. What are the differences between the present pregress discussion and the previous ones? What is the mood of meetings?

[Garbacz] Briefly: Candor, frankness, objectivity, and uncompromising attitudes vis-a-vis wrongdoing and all kinds of distortions in the economy and in social ethics. The fact that party meetings continue to be attended by many nonparty people who air their views about the PZPR draft program also has its significance. The discussion is lively and committed. People are interested in the party program, analyze it, compare it with reality and feasibility, and occasionally criticize it.

[Tykocka] You participate primarily in the meetings held by workers communities. What about the views of Ostrow workers about the party program?

[Garbacz] The Ostrow workers class is dominated by first-generation workers, that is, by the people who are still attached to the villages and so have developed a special mentality. Before the war Ostrow was primarily a township of railroadmen. Today it is an industrial center, and the work force of the railroad repair plant has increased to over 5,000. The town numbers about 70,000 inhabitants, including some 35,000 workers, 11,000 of whom are commuters.

One can be surprised to notice at party meetings that workers from villages do not discuss farm production in any way because what interests them as town dwellers is to buy plentiful varieties of food at the lowest possible prices. On the other hand, their fathers and brothers farming in villages want just the opposite: to sell milk, meat, and vegetables as dearly as possible. If a farmer's son works in the Ursus plant or in some other plant turning out products for farming and the rural population, he may be told by his father rather unpleasant remarks about his work in industry in view of the fact that the workers continue to suffer from shortages of machines and products.

The young workers I have mentioned prefer to keep mum on the subject of agriculture until both sides realize that the community of interests of workers and peasants is based on honest efforts at their respective jobs and that it is only through such efforts that it is possible to produce enough industrial goods and enough food. This is what makes the role of the pregress discussion attended by an experienced lecturer so important: He is able to direct the thinking of participants toward their own share in implementing the party program.

[Tykocka] How do people evaluate the party program?

[Garbacz] People air general and detailed views, but most of them say that the party program is too extensive. They say that the party should formulate three or four main goals and leave the elaboration of them to the government. The size of the party program is swollen by the first chapter, which is a too extensive treatment of obvious issues. It is true that we have scored achievements in many areas of our life and that the enumeration of postwar successes has a meaning for those who remember prewar unemployment, poverty, illiteracy, and workers' slums, but the younger generation views these successes against the background of our present difficulties and responds with impatience.

In the circumstances it is natural that people show the greatest interest in the third chapter of the program on the goals and tasks of our socio-economic development. However, they have aired much criticism in this regard as well. They are above all concerned that the party commits old errors by assuming too much responsibility for details and thus creating a plan instead of a party program. But it is the government that should be responsible for plans of housing construction, better living conditions, increased consumption, higher incomes, larger farm production, and so on.

These are my own impressions based on the first few pregress meetings. What is more valuable in this connection is that people discuss the party program with commitment and that nonparty people who attend our meetings share this commitment. This produces not only party but also civic and social views, and this is very significant.

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POLITICS

POLAND

# SHEVARNADZE INTERVIEW ON POLAND VISIT

LD192241 Warsaw PAP in English 2156 GMT 19 Mar 86

[Excerpts] Warsaw, March 19--Member of the Politburo of the CPSU Central Committee, Minister of Foreign Affairs of the USSR Eduard Shevardnadze, granted an interview to the Polish press agency PAP.

[Question] One of the most crucial problems of the world today is to liquidate indebtedness. In this connection Comrade Wojciech Jaruzelski put forth the known proposal on the forum of the United Nations General Assembly. How does the Soviet Union evaluate this problem?

[Answer] I remember well the address made by Comrade Wojciech Jaruzelski from the rostrum of the United Nations. It was listened to and received with great interest.

His direct and clear-cut approach to the problem of foreign indebtedness of states was highly convergent with the opinions and stances of the majority of delegations, especially of the developing countries. The description of the existing situation by Comrade Jaruzelski as financial neocolonialism precisely presents the essence of the problem.

That is true, imperialism is incessantly seeking ways to retain its economic domination over individual countries. From a wicked plunder of nations the imperialist powers finance their military programs, sustain their economic prosperity.

Comrade Jaruzelski was quite right when he reduced the problems of the development and of indebtedness to a common denominator.

As a result of the arms race unleashed by imperialism, the process of pauperization of states and nations is growing. The following data were quoted at our congress: There is a direct link between the thousand billion indebtedness of the developing countries and more than 1,000 billion rise in military spendings in the U.S. Over 200,000 million dollars are squeezed every year out of the developing countries. And the U.S. military budget has practically equaled this sum in recent years.

The channeling of means from the sphere of military production to the peaceful economy, a transfer of means released from the military sphere in order to allocate them for civil development would make it possible to solve all the principal economic and social problems of the Third World, a world in which the number of the starving people may grow to reach the 1,000 million mark by the end of this century, in which it is difficult for half of the infants to live to be 1 year, in which only every third child is vaccinated against killer infectious diseases.

But is it so that only the developing countries are at stake? In Western Europe, which boasts of high living standards, a reduction of military budgets would bring a saving to the tune of some 300,000 million dollars.

We hold the view that one should seek a solution also to these problems through a discontinuation of the arms race, through disarmament, a radical restructuring of the international economic relations on the basis of justice and equal-footing. We attach particular importance in this context to the promotion of the concept of international economic security--an integral part of the universal system of international security, submitted at the 27th CPSU Congress.

The Soviet Union, as it was put by Comrade Mikhail Gorbachev, comes out in favor of convening a world congress on this issue.

In this sense, the stances by the Soviet Union and by the Polish People's Republic follow in the same current.

[LD192325] [Question] Comrade minister, how do you assess the outcome of your current visit to Poland and what are, in your view, the main directions of developing relations between our two countries?

[Answer] Our visit was passing in an especially warm and cordial atmosphere. During the talk with Comrade Wojciech Jaruzelski and in the talks with my counterpart Minister Marian Orzechowski which were a continuation of the dialogue initiated in Moscow in December 1985, we discussed a very broad scope of issues and problems. They were examined in the spirit of principal decisions made during the recent meeting in Moscow between Mikhail Gorbachev and Wojciech Jaruzelski.

We have all reasons for satisfaction with the work we have done. Our cooperation is being expanded, enriched, and deepened. This is being realized on the basis of equality, respect for mutual experiences. Mutual assistance is based on reciprocal--I would say--on vital interest in the successes of socialist development of our countries. The better off you are, the more accomplishments you score in the economy, in social and cultural development, the better your friends from the countries of socialism feel. And the other way around--their achievements are your assets.

Poland's alliance with the USSR and also with other countries of the community is a safeguard of national sovereignty and independence, of a strong and developing Poland.

This is where we see a principal characteristic, a principal feature of mutual relations of socialist countries.

As for the main directions of the development of relations between Poland and the USSR, they were shaped long ago. They are defined by the unity of the sociopolitical system in our countries, the unity of our world outlook. This will continue to be a cooperation in the international arena in the struggle for peace, against the nuclear threat and danger of war, for the development of mutually beneficial cooperation of all countries.

We were highly impressed by the preparations for the 10th PUWP Congress which will undoubtedly have a great influence on the course of socialism building in Poland.

Comrade Jaruzelski has presented to us an impressive panorama of preparations by the party and the country for this crucial forum of Polish communists.

We, Soviet communists, wish it much success.

Apart from the official results of the visit, written down in the documents, there are also others. I am for the first time in Warsaw. We are impressed by the honest signs of cordiality, shown to us by various [Warsaw inhabitants] in the streets and squares of this heroic city. I was very interested in getting acquainted with the life of Warsaw and of the great citizens of the fraternal country. I was deeply moved while visiting sites sacred to our nations--the monuments of brotherhood in arms of Soviet and Polish soldiers who had sacrificed their lives for freedom and independence of the homeland.

What is impressive is the protection of historic monuments, the great mastery of the reconstruction of the monuments of history and culture.

During these spring days we saw a generous sun in the Polish art. We are proud to have such friends and to erect together the great building of the Soviet-Polish friendship.

I would like to cordially thank the PUWP Central Committee, the Polish Government and personally Comrade Wojciech Jaruzelski for his attention and hospitality.

I would like to convey most cordial greetings and best wishes to the residents of beautiful Warsaw and to all the citizens of fraternal Poland.

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POLITICS

POLAND

# JARUZELSKI MEETS STEEL PLANT WORKERS

LD272013 Warsaw Television Service in Polish 1830 GMT 26 Mar 86

[No video available]

[Text] The campaign preceding the 10th PZPR Congress is in progress. Individual discussions with party members are being conducted within basic party organizations. Wojciech Jaruzelski took part in such discussions at the Warsaw steel plant today. Other participants were: Stefan Jablonski, a merited steelworker who, after leaving the Silesian Batory steel plant for the Warsaw steel plant--which was being founded at the time--was promoted to the position of foreman following a period of a dozen or so years as a worker; Ryszard Opara, an electrician with highly valued qualifications; Kazimierz Miezajewski, an experienced foreman; Anatoliusz Derucki, who held a number of positions in a dozen or so years of exemplary work before becoming a foreman more than 5 years ago; and Ryszard Klysz, a fitter and member of the former Solidarity, whose friends chose him for the current leadership of the plant's youth organization. The exchange of views, which lasted many hours, was characterized by complete openness and great honesty. Wojciech Jaruzelski, together with members of the executives of basic party organizations, gave his views on the assessments and opinions expressed. He thanked the interlocutors for the many valuable reflections and proposals, which will be utilized in preparations for the 10th congress. One of the threads of pre-congress discussions and talks conducted within the party concerns economic affairs--thrift, work organization, advanced technological solutions, and export.

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POLITICS

POLAND

BRIEFS

CZYREK, GDR LEADER MEET--Jozef Czyrek, secretary of the PZPR Central Committee, received Ernst Mecklenburg in the PZPR Central Committee building. Roman Malinowski took part in the meeting. Horst Neubauer, the ambassador of the GDR was present. The leaders of the GDR Peasant Party and the United Peasant Party signed a new structural program of cooperation until 1990 and approved a protocol for this year. The documents concern, among other things, an exchange of experience in agriculture, press contacts, and the intensification of information exchange. [Text] [Warsaw Television Service in Polish 1830 GMT 27 Mar 86] /9365

WORKER ATTITUDES EXAMINED--Last year the voivodship party control commissions examined 1,172 cases concerning improper attitudes on the part of party members. Appropriate party sanctions were levied on the guilty parties. At today's meeting of the party Central Control Commission Presidium an improvement in the standard of the adjudicating activity of the Voivodship Commissions last year was ascertained. A draft report on the activity of the party Central Control Commission after the Ninth Special PZPR Congress, which will be submitted for final acceptance at the next commission plenum and subsequently presented to the delegates to the 10th party congress, was also discussed. [Text] [Warsaw Domestic Service in Polish 1900 GMT 26 Mar 86] /9365

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POLITICS

YUGOSLAVIA

GENERAL DISCUSSES PARTY ELECTIONS, MEMBERSHIP

AU031529 Belgrade BORBA in Serbo-Croatian 25 Feb 86 p 4

[Report by Dj. Martinovic]

[Excerpts] There are 4 more months until the 13th LCY Congress. How are the communists in the Yugoslav People's Army [YPA] preparing for the forthcoming LCY Congress, whom are they electing and how many candidates are they proposing for the party leaderships, what are the reasons that even some people in uniform (and when they take it off) are returning their party cards, and how are the army party ranks being rejuvenated?

VECERNJE NOVOSTI interviewed Colonel General Georgije Jovicic, president of the Committee of the LCY Organization in the YPA, about these questions, and we carry most of that interview.

The president of the Committee of the LCY Organization in the YPA frankly presented very full data showing that on the average, up to three times as many candidates as have to be elected to party leaderships in the army have been registered as possible candidates. The experiences with more candidates in the YPA has been assessed as positive. Those who will not be elected to full-time party functions will remain on military duty in their units, and the fact that they were put on the lists of candidates is considered a recognition of their overall work in the LC.

The number of communists in the army is changing so to speak from day to day, which is particularly characteristic of the past few years.

The causes of this situation lie above all in the new Law on Service in the YPA which has come into force and which provides that youths of 18 and 19 come to perform military service, and they include only 4.5 percent LCY members, General Juvicic added. According to last year's data, the LCY Organization in the YPA numbers about 93,000 members. Admitting members to the CY constitutes a considerable part of the overall activities of our party organization. Because of the changes in the composition of soldiers who constitute 90 percent of the admissions basis, the number of newly admitted is constantly decreasing. Thus, for instance, 28,000 were admitted in 1980, and only 12,400 new members 4 years later. Among other categories, the number of newly admitted members is fairly even, and among civilians employed in the YPA and cadets, it is increasing slightly.

The army party ranks also change because of expulsions from the LC and because of resignations. Our interview is frank and presents facts in this respect, too. One-half of those expelled from the LC, Jovicic said, are from the regular personnel, but the number of soldiers expelled from the LCY was reduced from 38 percent in 1980 to 20 percent in 1984. The causes that are most frequently mentioned are "irresponsible behavior," "violating the respect [word indistinct] to an LC member," and "passivity in carrying out the obligations of an LC member." The most frequent reasons for members returning their party cards are some unresolved personal status questions such as position, rank, an apartment, and others.

We remind General Jovicic of tales that a number of officers hand in their party cards when they take off their uniforms and retire.

We have no exact data on how many retired military officers returned their party cards and became passive, because they have left the LCY organization in the YPA, General Jovicic says. However, according to what we know, we are very satisfied with the political beliefs and activities of retired officers.

General Jovicic said that the criteria for the admission of young people to the LCY in the YPA need not be changed. He admits that after the 13th LCY Central Committee session it was requested that the criteria be heightened everywhere, including the YPA, but this was unnecessary in the army because they have always been "high" there.

We come to the paradox that the prestige of the army is constantly increasing, unemployment of young people is on the increase, but the interest (in some communities) in YPA schools is decreasing.

It is a fact that applications by candidates to military schools were decreasing all through 1981, General Jovicic said. Since then this trend has not only been stopped but has been reversed. The applications by candidates in 1985 increased as much as 60 percent in comparison with 1981. As regards the representation of the republics and provinces and national representation among candidates, the situation is also somewhat more favorable than it used to be, although the differences are still significant, especially regarding Croatia, Slovenia, and Kosovo. Despite the fact that the prestige of the army in society is very high, one must bear in mind that the military calling is very difficult. Officers must serve in garrisons all over the country, their working days is almost unlimited, and much time is spent in the field.

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POLITICS

YUGOSLAVIA

# VATICAN REPORTS BISHOP'S PROTESTS OVER ATTACKS

## Crude, False, Claims Cited

LD062312 Vatican City International Service in Serbo-Croatian 1800 GMT 6 Mar 86

[Text] Kotor Bishop Ivo Gusic has officially and publicly spoken about some unjust attacks and acts against the church in his bishopric. On 15 February Bishop Gusic sent a statement to the municipal commission for religious questions and the republican commission for relations with religious communities of the Montenegrin Executive Council in Titograd, and also to the Bishops Conference of Yugoslavia in Zagreb, the Metropolitan Bishops' Conference in Split, the mission of the Holy See in Belgrade and civilian and church organs of public information media in Titograd, Belgrade and Zagreb. Bishop Gusic's statement refers to the latest attacks in political bodies of Tivat, as well as to daily press commentaries which appeared in this connection. Bishop Gusic says:

Articles carry crude and false claims about the activity of the priests of the Kotor Bishopric on the territory of the Tivat municipality. I wish to stress above all that the so-called last summer's incident on the island of Sveta Gospa od Milosti near Tivat was given a provisional legal judgment as early as 8 October 1985 by a Montenegrin Supreme Court verdict, which declared null and void the verdicts by municipal and public magistrates against Franjo Ereis and Mate Vlahovic. They have been up to now and are both legally and morally correct and unconvicted citizens of this country and as honest members of the Society of Jesus, enjoy the complete confidence of the Kotor Bishopric. The entire malicious campaign in political bodies and mass media was based on false and unconfirmed facts, crude assessments and malicious interpretations, thus seriously harming the personality and dignity not only of the accused but the dignity of this bishopric, and also of the Roman Catholic Church as a whole. All our sincere efforts to halt this hasty campaign have not only failed to attract attention, but also, the Tivat League of Communists Municipal Committee continues to create a political case out of an annulled sentence, says Bishop Ivo Gusic in his statement addressed to various social organs and church bodies.

### Complaint Against Authorities

LD072307 Vatican City International Service in Serbo-Croatian 1800 GMT 7 Mar 86

[Text] As we announced yesterday, the Kotor Bishop, Ivo Gusic, sent a statement to the competent social organs, a copy of which was also sent to various church institutions, in connection with the unjust proceedings against church officials and believers in the Kotor Bishopric. In his statement, Bishop Gusic emphasizes that the Supreme Court of Montenegro, as early as 8 October, quashed the sentence imposed by the lower courts on two Croatian Jesuits and that impermissible political manipulation is still being applied in connection with the completely quashed sentences.

Talking afterwards about this trial and about the fact that the committee in Tivat declares that catholic priests have strengthened their activity in carrying out their regular religious duties and warns about the need for action to reduce such enthusiasm on the part of our priests, Bishop Gusic continues: This sincerely frightens us because we see no legal way that these counteractions may be carried out. We are no less frightened by the concern of the Tivat municipal committee because of the attendance of young people at church, concern because of their stated zeal in liturgical chanting, reading the religious press and taking of courses in religious instruction. Surely these are the guaranteed rights and freedoms of all believers, old and young, rights which are guaranteed in the constitution, the law and a protocol between the government of the SFRY and the Holy See, signed international documents and the often stressed political platform--in a word, everything that makes our country recognized as democratic and humanitarian.

And now this is bothering someone in Tivat, says Bishop Gusic, who continues: Why should anyone be worried about a believer feeling himself or herself to be a believer and this in a way which is allowed? We completely agree with the municipal committee of the Tivat LC that the abuse of religion for political purposes is dangerous and that it must be overcome, but we hope that it is no less important to stress that the abuse of politics for antireligious purposes is equally dangerous because it leads to the forced politicization of religion and religious deeds and activities and this is a long way from what the church and our sociopolitical community want, says the Kotor Bishop, Gusic.

In his statement he goes on to mention the [word indistinct] of the church because the church by itself renovated its buildings which were damaged in the 1979 earthquake, with the necessary construction permit, whereas the social community itself did virtually nothing in order to repair and preserve the same buildings.

The above statement of the Kotor Bishop, Ivo Gusic, is published in the latest edition of GLAS KONCILA [word indistinct] of 9 March on the whole of the third page.

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POLITICS

YUGOSLAVIA

MAN SENTENCED FOR 'HOSTILE PROPAGANDA'

LD071845 Belgrade TANJUG Domestic Service in Serbo-Croatian 1520 GMT 7 Mar 86

[Text] Tuzla, 7 Mar (TANJUG)--The council of the district court in Tuzla, presided over by Judge Tomislav Ljubic, has sentenced Marko Sokcevic, 23, from Orlovo Polje near Gradacac, to 3 years and 10 months imprisonment for hostile propaganda and the harming of the prestige of the SFRY.

Marko Sokcevic has maintained contact with hostile emigrants from September 1983 to December last year when he was detained. In this period in Munich as was proved at the court, Sokcevic came in direct contact with members of the Ustasha emigrants belonging to the Croatian Revolutionary Brotherhood, one of whose members is the well-known extremist and terrorist Ljubomir Dragoje.

After contacting Dragoje, Sokcevic accepted an offer to carry out hostile activities in Yugoslavia and distribute hostile leaflets for a reward of Dm 500. According to an agreement with the emigrants in the FRG he, along with several other collaborators, was supposed to commit sabotage on railway stations in our country, on passenger trains, pipelines and religious and other objectives. He also tried to involve some of his acquaintances in his activities, but they refused.

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POLITICS

YUGOSLAVIA

BRIEFS

MAN SENTENCED FOR ANTI-SFRY ACTS--Vranje, 21 Mar (TANJUG)--The Council of Five Judges of Vranje District Court today sentenced Zumberi Sacip, 36, from the village of Breznice near Bujanovac, to 6 years in prison for the criminal act of counterrevolutionary threats against Yugoslavia's social system. Explaining the verdict the presiding judge said that while living in Switzerland Zumberi Sacip organized and took part in anti-Yugoslav demonstrations in Basel, Geneva and Zurich and was a member of the "Preparimi" [Progress] cultural society which was engaged in anti-Yugoslav propaganda from the positions of greater-Albanian nationalism and irredentism. [Summary] [Belgrade TANJUG Domestic Service in Serbo-Croatian 1649 GMT 21 Mar 86 LD] /9274

SENTENCES FOR DAMAGING COUNTRY'S REPUTATION--Tuzla, 21 Mar (TANJUG)--The Council of the Tuzla District Court today sentenced Obren Jobic, retired arts teacher from Zvornik, to 5 and 1/2 years and Jovan Nikolic, dental technician, also from Zvornik, to 5 years in prison for crimes which fall under Articles 133 and 157 of the SFRY Criminal Law, i.e., calling for the destruction of the brotherhood and unity and quality of Yugoslavia's nations and nationalities; malicious presentation of the socio-political and economic situation in the country; and offending and damaging the reputation of the SFRY, its top leadership and the personality and work of Comrade Tito. [Summary] [Belgrade TANJUG Domestic Service in Serbo-Croatian 1448 GMT 21 Mar 86 LD] /9274

ALBANIAN SEPARATISTS SENTENCED IN MACEDONIA--Bitola, 19 Mar (TANJUG)--The district court in Bitola, Yugoslav Republic of Macedonia, today sentenced a five-member group of Albanian separatists to prison terms for associating for the purpose of hostile activity. Tahir Hani, 25, was sentenced to 13 years, Gzim Kaleciwn, 24, to seven years, Mirsim Helmani, 25, to six years, Garip Kabi, 22, to five years and Sulejman Kami, 25, to three years in prison. The court found that the defendants' chauvinist and separatist activity was aimed at falsely presenting the position of the Albanian nationality in Yugoslavia and changing the country's federal system by force. Their objective was a "Republic of Kosovo" enlarged with parts of the republics of Serbia, Macedonia and Montenegro, which would then seceded to Albania. [Text] [Belgrade TANJUG in English 1717 GMT 19 Mar 86 LD] /9274

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